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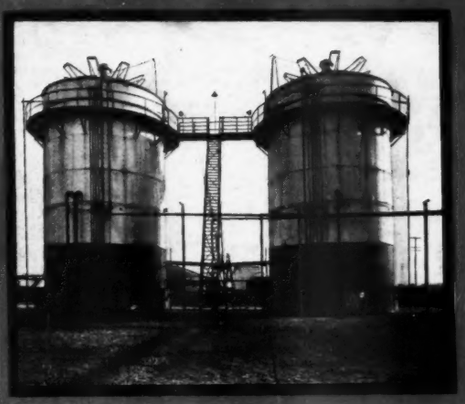

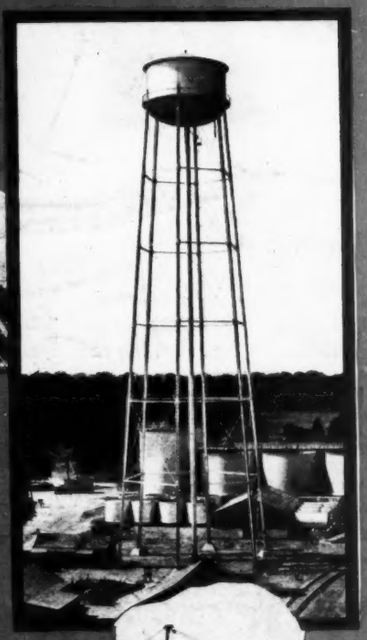

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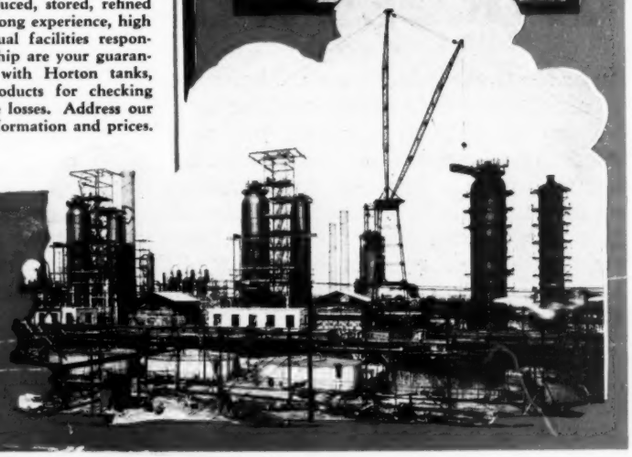

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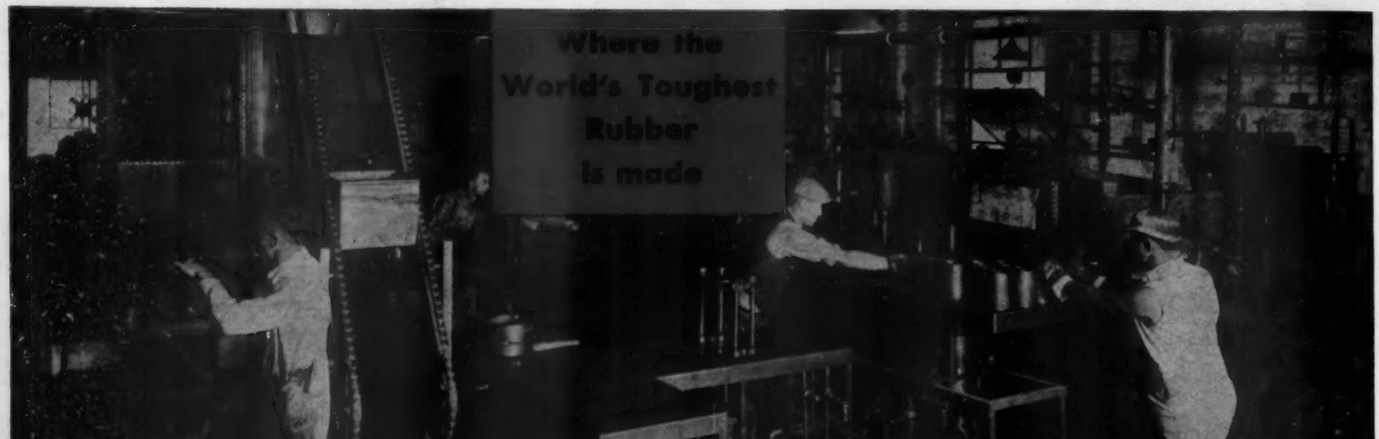

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The OIL and GAS JOURNAL

PRODUCING REFINING PIPELINE ENGINEERING MARKETING

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East Texas Only Field Overproducing

Highest production in 1930, week ending Feb. 22, average daily output 2,699,096 bbls. Peak of U. S. production, week ending Aug. 24, 1929, average 2,975,435 bbls.

If Proration Orders Were Obeyed, National Oil Output Would Be in Line With Demand. Great Waste Threatened

By James McIntyre

Lowest daily average crude oil production in the United States during 1930 was for week ending Dec. 27 with average output of 2,144,074 bbls.

Production in the United States in the past week declined 30,800 bbls. of which East Texas was responsible for 11,658 bbls. of the decrease.

There are 160 completed wells in the East Texas fields without a pipe line connection. The owners of some of these are frantically seeking a market for their oil even at the lowest prices being paid in the field. There may be an outlet for some of this shut-in oil when certain big purchasers are ready to ship to their large storage farms.

From the viewpoint of a man outside, looking into the field, the attitude of some of the main purchasers—who are, by the way, the most ardent prorationists—seems to be that if common sense cannot be pounded into the short-sighted faction of East Texas oil producers, the purchasers will proceed to buy all the East Texas oil they can contract for, and at unheard-of low prices, and put it away for future use. If East Texans force this upon themselves they will wake up some day with the severest headache any set of oil men ever experienced, and the rabid antiprorationists will hear from the misguided farmers and other local royalty owners a line of unfavorable criticism that will not cease for many a year.

The East Texas Field is the only one in the world that is overproducing to an appreciable amount outside of Rumania. The State of Texas is overproducing about a quarter of a million barrels a day and East Texas is contributing 200,000 bbls. a day to this. If the new field were being kept in line with national crude oil demand, the relatively small overproduction of the other Texas fields would be more than offset by the underproduction of other states and we would have a condition where supply and demand would be in line with one another.

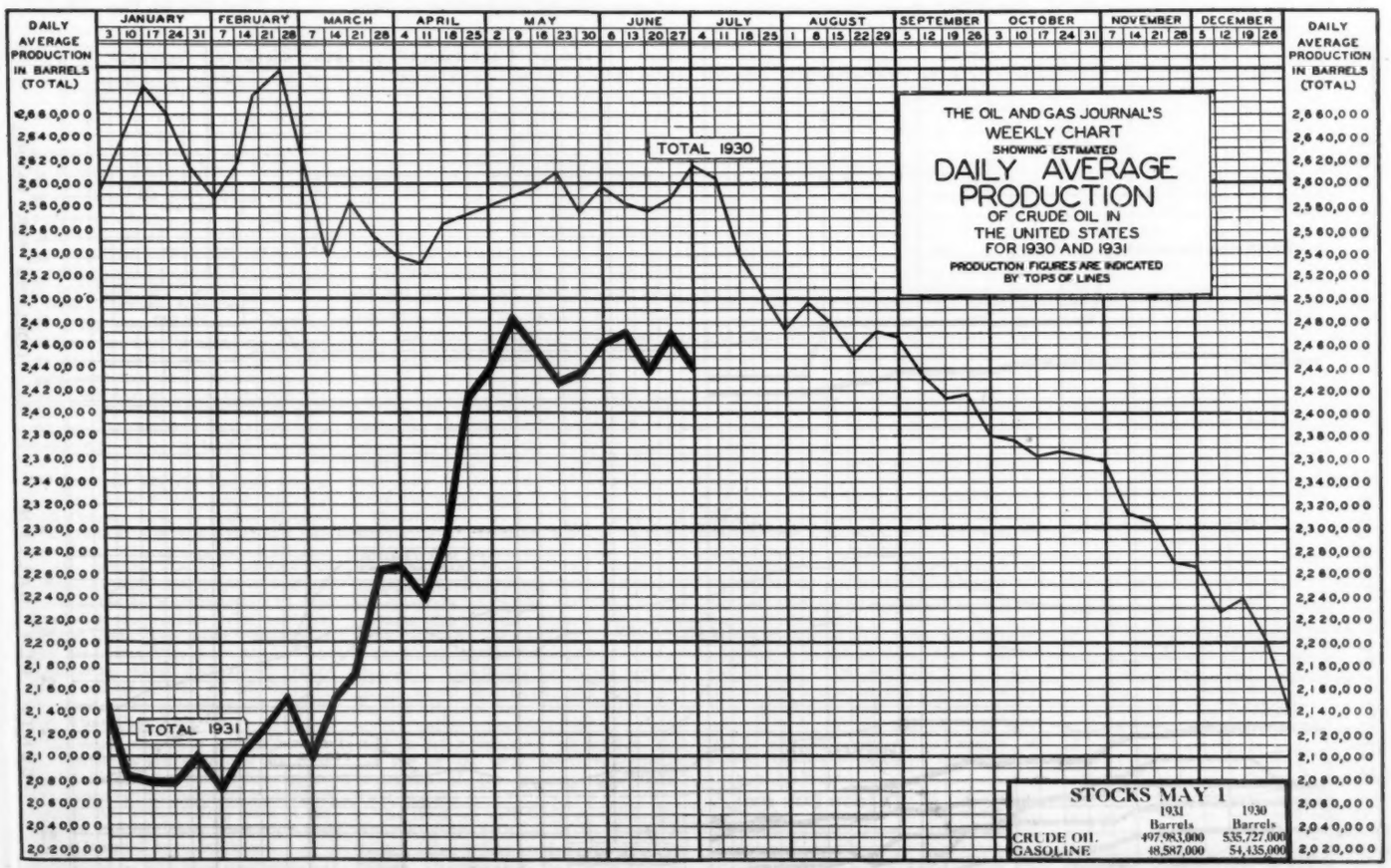
There is no question as to the benefit of such an ideal situation. It would not only be good for the industry generally, but would benefit more than any others the East Texas producers and royalty owners themselves. It would mean years of development work and prosperity to that whole district, a greater ultimate production and a far greater return in dollars and cents.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of crude oil in the United States for week ended June 27 and a comparison with the previous week follows:

	June 27	June 20
Oklahoma—		
Oklahoma City	155,460	161,935
Seminole-St. Louis	146,870	156,265
Remainder of State	241,420	238,945
Total Oklahoma	543,750	557,145
East Texas—		
Kilgore	163,110	188,868
Lathrop	82,205	68,372
Joiner	114,389	114,122
Total East Texas	359,704	371,362
West Texas	213,696	215,113
North Central Texas	86,771	84,699
Texas Panhandle	60,064	58,940
East Central Texas	59,800	60,150
North Louisiana	35,690	35,950
Arkansas	44,220	44,870
Kansas	101,840	100,910
Total Mid-Continent area	1,505,535	1,529,139
Gulf Coast	156,664	159,676
Southwest Texas	65,265	64,336
Eastern	110,500	110,000
Rocky Mountain area	97,257	98,370
California—		
Santa Fe Springs	63,000	64,500
Long Beach	76,000	76,500
Playa Del Rey	25,000	26,000
Elwood	25,500	26,500
Kettleman Hills	62,500	58,000
Remainder of State	258,250	263,250
Total California	510,250	514,750
Total United States	2,445,471	2,476,271

→ **Decrease 30,800 Bbls. Daily** ←



Upturn in Oklahoma Gasoline Market

Tank Car Prices Recover Rapidly in Response to Heavy Demand From Buyers. Sellers Believe Improvement Will Continue

By C. O. Willson

Gasoline tank car prices in Oklahoma and the Mid-Continent generally moved upward the past week in response to a continued heavy demand which has been showing a steady improvement since early in the month. The price improvement appeared to be on a sounder basis than any of the temporary flurries of the past year, a period marked with a general decline in all products used as motor fuels.

The gasoline price advances were entirely due to a changed condition in regard to supply and demand, the latter for the first time in many months exceeding the former. The East Texas situation, which has more or less dominated the entire refinery market since early in the year, temporarily at least, moved into the background as a gasoline market factor as buyers continued to pour orders into the Mid-Continent market.

The improvement in the gasoline market came as a surprise to many sellers as well as buyers. Most of the trade had come to the conclusion that until the East Texas proration problem had been ironed out no improvement in Mid-Continent refinery markets was to be expected, due to the dominant position obtained by a group of East Texas refiners and outside refiners who had cheap crude oil supplies available from the new fields of that area. This important position of East Texas in the permanent well being of the oil industry generally has not changed and those who are looking forward to probable market conditions next fall and later in the year continue to stress the desirability of perfecting a workable plan which will keep the supply of crude oil and refined products in line with the demand.

However, the shift in the gasoline market situation over the past week indicates that price movements at Mid-Continent refineries over the next 30 to 60 days will be independent of developments in East Texas. If, during that period, an orderly method of production for East Texas can be worked out, then it appears certain that the end of summer will not bring another downward reaction in gasoline market and refiners of gasoline can look forward to the fall and winter with the assurance that they have already experienced the lowest prices of the year.

REFINED MARKET BAROMETER

Improvement in the gasoline tank car price trend was reported from most of the refining areas in the United States during the week. The only important exception was in the East Coast areas where the threat of direct competition in the domestic market by the Soviet government of Russia has been a disturbing factor. The principal strength in the refinery market centered in the Mid-Continent and California. Natural gasoline prices again advanced in the latter area but otherwise the market was unchanged. Kerosene continues to be a weak product, substantially lower prices being made effective along the East Coast and export market. No important changes were reported in fuels with some scattered improvement in demand. Both the industrial and motor oil demand is improving but no price changes of importance became effective during the week. Wax prices unchanged.

Mid-Continent—Higher tank car prices on gasoline reported in all areas with expectation of generally strong market through July. Natural gasolines strong in Oklahoma. Kerosene prices lower. Slow spot demand for fuels, furnace oils and gas oils with high cold test material available at lower prices. Lubricants and wax unchanged.

East Coast—Report that Soviet government is to ship gasoline to the United States disturbs market. Gasoline market soft. Kerosene prices reduced. Fuel oil, gas oil and Diesel oil unchanged. Reductions in cylinder oils.

Chicago—Distinct improvement in gasoline market with heavy demand. Kerosene continues dull. Better demand for lubricating oils. Lower prices for fuel and gas oils.

Gulf Coast—Better tone to gasoline market. Better demand for fuel oils. Less pale and red oils offered below market.

Pennsylvania—Gasoline prices fractionally lower. Other products unchanged.

California—Prices on refinery gasolines and natural gasolines advance. Kerosene unchanged. Some grades of fuel oil and distillate advance.

Statistical Situation Strong

In brief, the gasoline market over the past several months has been dominated by an unhealthy crude oil situation and prices were allowed to slump to record lows despite the fact that during this period the refinery situation considered by itself was in better shape than it was last year. Having this condition in mind, one refinery sales manager predicts that during July and August at least, refiners will be able to benefit from their conservative operations during the winter and spring months, a period in which as a unit they have reduced their crude runs to stills and kept their gasoline storage under the same period last year.

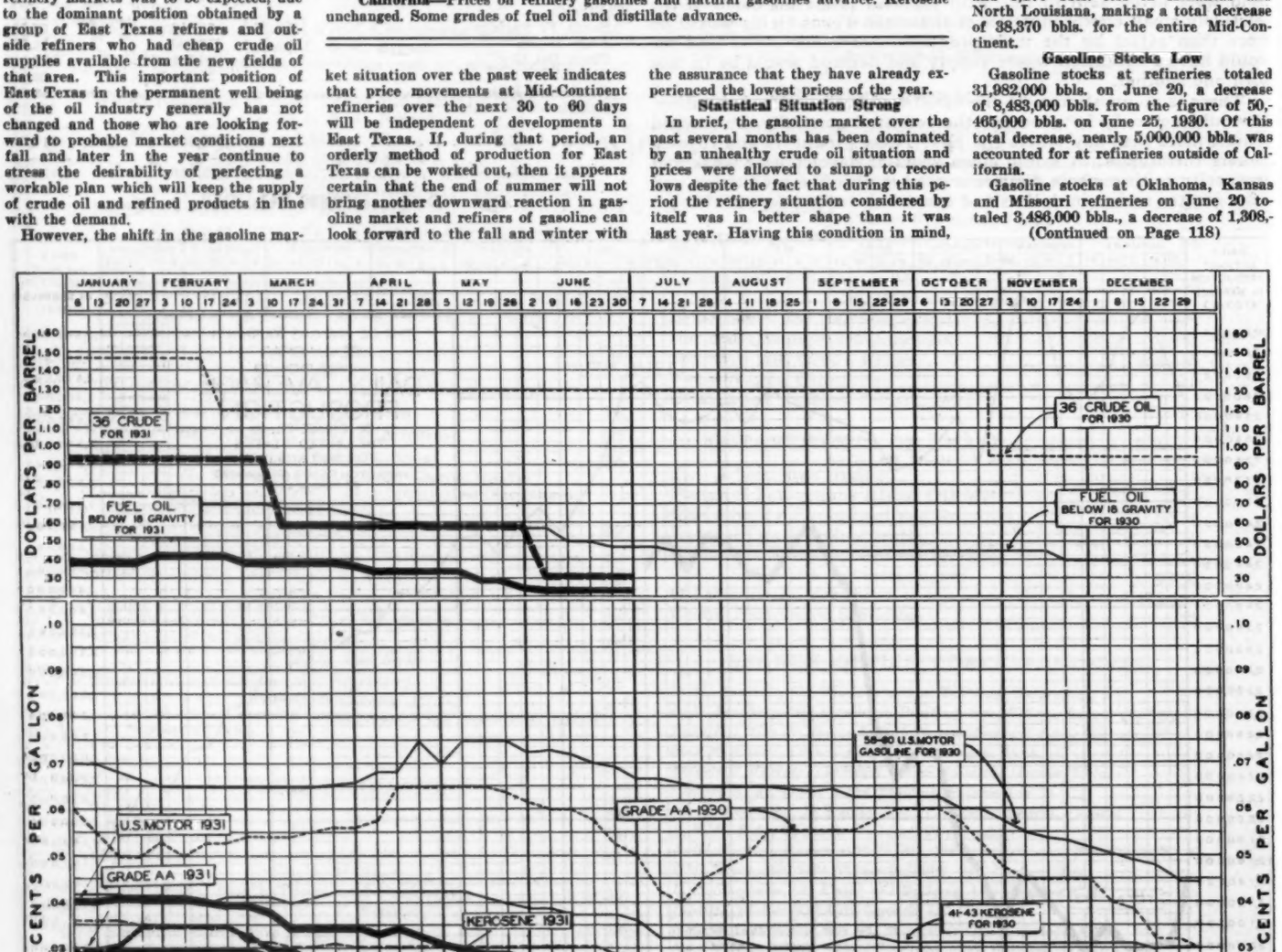
The relative statistical situation now and a year ago so far as refinery operations are concerned is readily apparent from a study of the American Petroleum Institute's weekly report on refinery operations including stocks of gasoline and fuel oil. For the week ending June 20, crude oil runs to stills at refineries in the United States averaged 2,621,000 bbls. daily, a decrease of 187,000 bbls. daily when compared to the corresponding week of last year. Gasoline output is not given but despite the increased yields of gasoline from crude oil, it is known from government figures that present production has been running less than last year. In Oklahoma, Kansas and Missouri crude runs to stills were 22,000 bbls. daily less than a year ago, 11,200 bbls. daily less in inland Texas and 5,170 bbls. less in Arkansas and North Louisiana, making a total decrease of 38,370 bbls. for the entire Mid-Continent.

Gasoline Stocks Low

Gasoline stocks at refineries totaled 31,982,000 bbls. on June 20, a decrease of 8,483,000 bbls. from the figure of 50,465,000 bbls. on June 25, 1930. Of this total decrease, nearly 5,000,000 bbls. was accounted for at refineries outside of California.

Gasoline stocks at Oklahoma, Kansas and Missouri refineries on June 20 totaled 3,486,000 bbls., a decrease of 1,308,-

(Continued on Page 118)



Buyers Prepare for Cheap Stored Oil

Willingness of East Texas Oil Men to Sell Product at Lowest Prices Starts Storage Campaign. No Proration Agreement

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., June 29.—The Cranfill plan of curtailing production in the East Texas district went by the board this week after a trial by a majority of operators during a 10-day period when backers of the plan tried to obtain co-operation from all producers in the district in an effort to give the plan a fair deal to see if it was workable or could be used if certain phases of it were changed as required and needed. Many were opposed to it, consequently it had but little chance to succeed. A special session of the state legislature now looks imperative to bring about legislation which might give the Railroad Commission needed powers to enforce the first proration plan which was put into effect in the district, and which is functioning but partially, many opponents of it not abiding by the orders, but flowing their wells according to their desires or contracts.

When postings in the district were abandoned by the Texas Pipe Line Co. and Humble Pipe Line Co., and the oil dropped to 15 and 10 cents per barrel it was believed that activities in the district would slump off considerably, and last week reports checked in that direction, but this week the district reported a total of 82 first reports and 104 completions, although the total number of drilling wells fell off from 609 as of last week to 578 this week. It looks as if activities would not be stopped even if the oil is sold for a nickle a barrel, and the pipe line companies that have lines in the field, and have empty storage in the State will take advantage of the cheap price to run as much as possible, and are arranging for the leasing of storage in some cases. The Humble Oil & Refining Co. has leased 1,500,000 bbls. of steel storage from the Stanolind Crude Oil Purchasing Co. at the latter's tank farm at Mexia, and will fill this with East Texas oil. A 10-inch line of the Humble Pipe Line Co., which is now in operation, will transport the oil from Gregg and Rusk Counties to the Mexia tank farm.

The Texas Pipe Line Co. is shipping 6,000 bbls. per day by tank car out of Gregg and Rusk Counties, and during the past week has been transporting 44,820 bbls. per day by trunk line from the district to Houston. Price of oil purchased on one contract made by this company was 12 cents loaded on tank cars.

The Primrose Oil Co. entered into a contract with the Kettle Creek Refining Co., El Dorado, Ark., to deliver 250,000 bbls. of crude at a rate of 4,000 bbls. per day to that company's plant at El Dorado, the refining company paying for the crude as used, the price of the oil to be regulated by a sliding scale to correspond with the average price paid for oil in the field. The latter company is to pay the Atlas Pipe Line Co. a 7½-cent gathering charge, and 20-cent transportation charge on the oil which is to be delivered to the refinery at El Dorado by the Atlas Pipe Line Co.

While crude contracts continue to be made, companies and operators are buying and selling leases in the three areas, proven leases having fallen off in demand and price, due to the falling price of the oil and to the fact that production has not been lowered by curtailment.

Two operators who have production on a 10-acre tract in the George Davis farm in the Chisum Survey, Kilgore area, tried to get a pipe line connection during the past week but failed. At the present time they are considering the sale of a minimum of 5,000 bbls. per day, and maximum of 10,000 bbls. per day for a period of 90 days, at a price of 12 cents per barrel. The owners stated that the oil would be handled through the Texas Pipe Line Co.'s lines.

The operators also stated that they were willing to abide by proration if they could obtain another connection, but being unable to do that, made such a contract as outlined in order to save themselves by selling what oil they can for the price named above.

It is also reported that one major purchasing company is soliciting oil in the East Texas district for 8 cents per barrel, but it is not known whether any contracts have been closed at this price. However, it is not an absurd price under the present conditions, and many thousands of barrels may be sold at this or a still lower price.

Meeting at Dallas

The Arbitration Committee of seven, the East Texas Advisory Committee and members of the Texas Oil Emergency Committee met in Dallas on June 27, with Capt. J. F. Lucey presiding, to discuss the East Texas situation, but little, if anything, was accomplished towards coming to an agreement on a plan which could be submitted to the railroad commission at its meeting in Austin.

About 160 wells were without connections in the district and the principal stumbling block, as in many previous proration meetings held in other districts in Texas during the past year and a half, was the problem of obtaining connections for all of the wells now unconnected by any pipe line.

H. L. Dickerson, of the Arkansas Fuel Oil Co., spoke emphatically against the Cranfill plan, and urged enforcement of the present order of the railroad commission stating he believed that less drilling would be done under that order than under the Cranfill plan, and that if the operators continued to drill wells that they were committing suicide.

R. D. Parker, chairman of the Oil and Gas Division of the railroad commission, attended the meeting and voiced his disappointment in the inability of the operators and companies to work out a fair and equitable plan which would meet with everybody's endorsement, and could be used in the district.

Underwood Nazro, vice president of the Gulf Production Co., stated that he thought a plan which allowed a certain amount per well in the district is the most practical for the fields.

Freeman Burford, of the East Texas Refining Co., vouchsafed the opinion that a voluntary plan of curtailment for the district was no good, and stated that any plan so far presented was good if it could only be enforced. Mr. Burford is for enforcement of curtailment of the district, and made a plea to that effect.

Charles Roeser, of the firm of Roeser & Pendleton, urged the allowance of 200,000 bbls. per day from the district, which would insure connections for all of the 160 unconnected wells, and protested against the present rate of daily production which the pipe line companies are buying at the prevailing low prices.

E. L. Smith made the everlasting plea for co-operation, which is always unheeded, stating that if everyone insisted on taking advantage of present conditions for his own gain no compromise could be effected and the problem of curtailing production would continue unsolved.

The meeting adjourned, the members who attended feeling they had accomplished nothing, deciding to leave all questions for the hearing at Austin.

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Lucey Has New Plan for East Texas

Suggests That Field Be Limited to 250,000 Bbls. a Day With Limit to Production Per Well. Many Backers

By Raymond Brooks

AUSTIN, Tex., June 30.—A well limit plan was proposed to the Texas Railroad Commission Monday by the East Texas Oil Arbitration Committee as the third attempt to regulate the field, after geologists testified the Smith County portion of the richest field in recent years will be "dead" before the end of the year without restriction.

The well plan would allow the field 250,000 bbls. a day, roughly 250 bbls. per well, each new well to be allowed 100 bbls. daily at first and the average well allowance readjusted downward each 15 days.

The Cranfill 20-acre unit plan was laid on the shelf without comment, and operators and advisors conceded the admitted violations of the former well potential basis have already brought water into some of the wells and have endangered the whole field.

Chairman C. V. Terrell recessed the hearing until Tuesday with a declaration that the proposals make the hearing the most important in the history of railroad commission proration. He urged all operators to "make sacrifices, agree on some plan and then observe the orders of the railroad commission."

Chairman R. R. Penn of the Central Proration Committee said his official group would not recommend new production figures for East Texas, but simply put in evidence to show that the field is being damaged, oil wasted, and the life of the field shortened through violations of the present 160,000-bbl. limit orders.

The third, or well, basis plan was proposed verbally by Capt. J. F. Lucey of Dallas, after a long conference with Dan Moody, attorney for the East Texans, and with operators, at noon. Captain Lucey had been here a week ago in the fruitless effort to get the Railroad Commission to ratify the Cranfill acreage-unit plan.

The witness who predicted the life of the field will be snuffed out before January 1 was E. V. Foran, technical advisor of the Central Proration Committee.

William R. Boyd, president of the American Petroleum Institute and originally a Texan, who came back to Texas from New York to attend the meeting, urged operators to take drastic steps to curb the overproduction that has caused overextension in both refining and distribution of oil. He said the control of crude oil production will remedy all the other bad conditions. The oil output of all other nations except Rumania, of all others states, and all of Texas except East Texas, he said, has been brought under control.

Gov. Ross S. Sterling returned to his office after several days' absence, but had no comment concerning a special session to deal with oil production.

Testimony that salt water already is coming up in the Kilgore Field as a result of overcrowding wells was offered by E. V. Foran.

Foran testified that with unrestricted production, the East Texas Field will be turning loose 1,000,000 bbls. of salt water a day, equal to the entire flow of both the Sabine and the Neches River, into which it will run, and will ruin irrigation and the city water supply of Beaumont, Port Arthur, Orange and other cities below.

R. R. Penn, chairman of the central committee, announced at the start the committee this time will not recommend a new production limit for East Texas, but would set out to prove waste is now going on and the field being endangered through chaotic production.

"We do want to see the Railroad Commission enforce its regulations in the most vigorous manner, and if this fails, then legislation will be required to conserve this natural resource.

"The State is now losing about $25,000 daily in Texas oil taxes, the university and common school founds are losing heavily."

He said 160 wells in the East Texas Field are now denied any sort of pipe line connection for ratable taking of their oil as required by law and Railroad Commission orders.

The Railroad Commission Tuesday afternoon continued its hearing on East Texas oil field proration. At noon the commission received a notice from W. O. Crane, of The Texas Company, that his company is favorable to the conservation plan but convinced no plan can succeed without additional legislation, and cannot continue to observe the East Texas proration if others violate it.

Attorney Joe Brown read a statement from Underwood Nazro of the Gulf Production Co. that market demand is a false basis, and supporting the East Texas well-limit plan put forward by Captain Lucey. W. L. Goldston, geologist for Cranfill & Reynolds, one of those which has ignored the former orders, testified that East Texas can produce 1,000,000 bbls. daily without danger of water.

The Sinclair Oil & Gas Co., through Paul McDermott, announced its support of the new East Texas plan, if made legal by Railroad Commission order.

Several operators Tuesday morning conferred with Governor Sterling about the special session, and were told he is watching the outcome of the Railroad Commission hearing before deciding about convening legislators.

Greed Versus Proration in East Texas

Operators Kill Goose That Lays the Golden Egg Through Unrestricted Output. Net Cash Return Cut in Half

NEW YORK, June 27.—With competition unrestricted and uncontrolled in East Texas, operators in that territory are killing the goose that lays the golden eggs and are dissipating a great asset, says the "Lamp," official publication of Standard Oil Co. (New Jersey) in its current issue.

Under the original posted prices, established at a time when it was believed that the East Texas Field could be controlled, the "Lamp" points out, the value of today's production from the field would be $221,000. The same amount of production would have been valued at $116,000 per day even after the drastic price cut adopted when it was seen that proration could not be enforced. With posted prices withdrawn the aggregate value of the present daily production of the field is now $70,200 at 20 cents a barrel, which appears to be a fair average.

The "Lamp" presents a comprehensive review of the East Texas situation and its relation to the general proration movement in the oil industry in the United States from which the following is extracted:

"When the Joiner Field was discovered, on September 8, 1930, the price of 38° crude was $1.01. The first posted price by a large company of 63 cents a barrel was applied on March 26, 1931, when the field was producing 122,000 bbls. On May 26, with the proration order being ignored, production was 303,000 bbls. and the price dropped to 33 cents. On June 3, production still being on a rising scale, the major purchasing companies withdrew their quotations and the price became what anyone could get for his oil.

"While regrets are vain, and oil once produced can never be replaced, it is worth noting that if the area had been restricted to the 160,000 bbls. recommended by the State Railroad Commission, the total value of this allowable production would have been $100,000 per day, $36,000,000 a year, or nearly half again as much money as is now being received for more than twice the quantity of oil.

"But the true cost of allowing this new field to run riot is many times the difference indicated, because flooding from East Texas finally pulled down the whole Mid-Continent structure. The average price of crude oil east of California on the date of discovery of the Rusk-Gregg County Field was $1.22 per barrel, which made the total value of the current production $2,360,000 per day. After the possibilities of the East Texas area became known, and the first posted price was put up, the average price of Mid-Continent crude fell to 63 cents a barrel. On June 3, when the posted prices were withdrawn, the average east of the Rockies was down to 35 cents, and the current production was valued at $673,000 a day. An average decline of 71½ per cent in the value of crude represents an annual difference of some $615,000,000 to the producers east of California. A more convincing instance of the value of a sound proration program would be hard to find.

"East Texas embraces about 120,000 acres and may ultimately produce from 1,500,000,000 to 2,000,000,000 bbls. of oil. Properly handled, it would have been a wonderful discovery for the property owners and the State and should have been continuously producing under control for many years. Because the proration order could not be enforced and voluntary co-operation failed, this field has spelled disaster to itself and the petroleum industry, and but few people have been in anywise gainers by it. The story of East Texas, told here, is rich in its lesson to the industry.

Proration Benefited Other Fields

"Proration, the now common procedure by which each producer in an oil field with potential production in excess of market demand is allotted his fair share of whatever market is available, has always been difficult to establish in new fields. Producers who have not previously operated under proration usually view the plan with suspicion at first in spite of the fact that in no field where it has once become established has it ever been abandoned. Its advantages and benefits are so great in fields like Yates, Hobbs and Darst Creek that the owners of property could not be persuaded to dispense with it.

"In the case of the new large field in East Texas, opposition to proration has been so strong and effective that even now, after more than six months of effort, proration authorities still are unable to enforce their orders.

Why Program Failed

"Aside from the unusual size of the East Texas Field, which in itself made the establishment of proration difficult, the principal causes for the failure of the proration program are:

"1. The attitude of a number of individual producers who, in order to sell a large volume have been willing to accept prices below established markets and have defied proration in order to make such sales;

"2. The attitude of a number of purchasers of oil who, in order to secure cheap crude, were willing to defy proration orders and to buy large volumes from a single producer under contract in order to justify him in making them a low price, instead of buying only allowable amounts from a sufficient number of producers to meet their requirements;

"3. The lack of any law adequate for effective enforcement of the proration orders of the railroad commission;

"4. The attitude of local residents of East Texas, who feared proration would stifle their prosperity and deprive them of the wealth that should come in the wake of the discovery;

"5. The attitude of the common purchasing companies, who were loath to make connections to purchase ratably in the face of adequate enforcement of ratable production;

"6. The delay of state officials in their attempt to set up proration machinery and in proceeding to enforce the orders after they were promulgated;

"7. The early attitude of oil producers in other parts of the State, who at first insisted that the outlet for East Texas be restricted unreasonably.

Unwelcome Treasure

"The discovery of the East Texas Field could hardly have been made at a less opportune time. For several years the industry had enforced upon itself drastic curtailment of production in order that current demand might overtake supply. Aboveground stocks were still extremely burdensome. Established producers everywhere had carefully refrained from drilling unnecessary wells, and a new oil field was the last thing anyone within the industry wanted to see. In fact, if some arch enemy of the petroleum industry had sought to do it the greatest possible injury, he could scarcely have hit upon a more diabolical scheme than to bring upon it this new oil field; larger in size than any previously discovered, with prolific wells of comparatively shallow depth, and leasehold vested in hundreds of small ownerships in the hands largely of people who had not been identified with and had no interest in the oil industry. Control and orderly production under such circumstances appeared almost beyond hope.

Proration and Prices

"East Texas is now producing about 350,000 bbls. of oil daily, in spite of the fact that the Railroad Commission of Texas has fixed the maximum allowable production at 160,000 bbls. When it was discovered, six months ago, oil of the grade which it produces was selling generally for a little over $1 per barrel. Today the average price being paid for East Texas oil is less than 20 cents per barrel, and the corresponding price in other fields has declined to 37 cents per barrel.

"It may be estimated that the new East Texas Field will flow less than 20 per cent of its total production. The remainder must be pumped or lifted by some other method. Similarly it is inevitable that the field will produce a great deal of water, since gas-oil ratios are low and water encroachment is already evident. If 2,000,000,000 bbls. of oil are produced, then 10,000,000,000 bbls. of salt water will have to be lifted (unless improved production methods are adopted).

"In the old Woodbine sand fields of East Texas one well was drilled for each 3 acres of producing area. Such a spacing would mean 40,000 wells for the new field. The average ultimate recovery per well would be 50,000 bbls., on the basis of 2,000,000,000 bbls. ultimate for the field and, if the prevailing price for oil, 20 cents per barrel, were maintained, the total return for each well drilled would amount to $10,000. On the other hand, if efficient methods of exploitation were employed in the new field, not more than one well per 10 acres, or 12,000 wells, would be drilled. Recovery would be maintained at the same total figure, if it were not, in fact, increased, and income would rise to about $33,000 per well, even on 20-cent oil.

"The cost of producing crude in East Texas over the life of the field, proceeding in the present competitive fashion, will not be less than 75 cents per barrel. If it became possible through consolidation, proration, or some other unitization scheme, to make use of efficient production methods, costs in this field would certainly be kept below 45 cents per barrel. Both figures assume the validity of the yield estimates herein set up. It is obvious that present prices spell certain ruin for operators in the East Texas Field, even if conditions permitted efficient production methods to be employed.

"As things are now a few properties,

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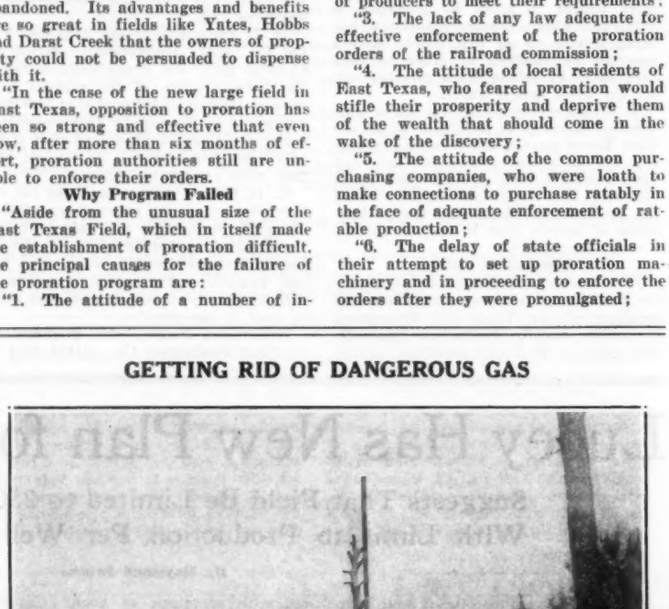
GETTING RID OF DANGEROUS GAS



Two-inch standpipe erected alongside of the trunk of a tall pine tree in the Joiner Pool, East Texas, for a gas flambeau. Much casinghead gas from wells in the district is dissipated into the air in this manner, and due to the fact that the gas is so saturated and volatile such methods of getting rid of it, have to be taken to prevent the gas from settling in the ravines and swamps, causing the danger of serious fires as have already occurred with the resultant loss of life.

Marketing Trend in Oil Field Equipment

Change in General Conditions in the Petroleum Industry Leading to More Modern Methods of Merchandising Being Adopted

By L. G. E. Bignell
Petroleum Engineering Editor

The oil man's field of operations has been and is still undergoing some rather remarkable changes in every department of activity, from methods of development and production of an oil field, on through transportation and marketing of finished products, but perhaps no department of the industry has seen any greater changes than the one that has to deal with the purchasing and warehousing of material and supplies for field operations.

Back in the good old days when oil sold for over $2 per barrel and it was customary to drill wells upon "hunches" and at places where it "looked like oil country," or to follow "creekology" or some other weird system in locating wells, it was usual for the operator to handle personally all details having to do with the drilling and producing of wells. He would buy the lease, make contract for the derrick and equipment and hire the drilling contractor and personally supervise the details of drilling and bring in the well.

If he struck oil he was usually able to cash in quickly and would spend his money freely for things for his personal comfort or for further ventures into other oil deals, and, if his luck held, in time he became an important factor in his district and money was plentiful.

Generous by nature and always willing to take a chance, it was only natural that he was a free spender and in carrying on an operation it was the rule rather than the exception that more was spent for the equipment and labor than was actually necessary, but the operator's first thoughts were to get results regardless of cost, for he knew that if he got a well he could afford to pay the extra cost his haste had made necessary, whereas if he got a dry hole it made little difference anyway.

This spirit of free spending has been the heritage of the industry passed down from the days of "Coal Oil Johnny" and as the oil companies grew and organizations were built up the employes have absorbed that spirit of "do or die" to get the well on production that had been the motivating force of the founder of the company, and they have in many cases felt that they were doing the right thing if they spent freely for then it could not be said of them that they had placed any obstacles in the way of the quick completion of the well.

Field Warehouses Expensive

Buying was placed under experienced and trained men who built up extensive organizations and had intricate systems of keeping track of their purchases and needs, but back of it all was the same idea that haste was necessary and they feared the criticism of the field man if anything should occur to hold up his work for he would complain to the "boss" that he was being delayed in getting the well finished and on production, and such a complaint carried great weight and was to be avoided if possible.

As a consequence many of the growing oil companies made it a practice to establish warehouses in the fields at advantageous points where stocks of all kinds of equipment was carried and distributed to the field men as they called for it. Many companies have had from 25 to 50 such warehouses in operation at one time and carried stocks that totaled several millions of dollars.

It was customary for the field men to send in requisitions at regular intervals for material they expected to need, say once a month or every 60 days and after these requisitions passed the desk of the superintendent and had his perfunctory consideration they were passed on to the purchaser for buying.

Under such a system it was not uncommon for the field man to requisition his material by 50 and 100 piece lots and in many cases his needs would seem to justify requisition for several thousand parts, if the company was planning an extensive drilling campaign.

Weaknesses Discovered

Such practice was encouraged by the purchaser in many instances for it gave him opportunity to do some close buying from the supply company or the manufacturer and get quantity discounts. Under such a practice it has been estimated that a saving of from 2½ to 10 per cent might be made, but a later check of this system revealed its weaknesses. It was found that this was an apparent gain only for when total capital investment in stocks was considered and it was realized that several millions of dollars' worth of material was being carried in the many warehouses at one time, the interest on this great sum of money, and the loss due to stocks being made useless by change in practice or new and better equipment becoming available, it was found that the cost of doing business in this way exceeded the saving made by quantity buying.

It is not hard to realize how stocks would mount when it is considered that companies have had from 10 to 50 warehouses with an investment of from $10,000 to $50,000 in each one. As the field was developed changes were bound to occur; the company's acreage was not as good as anticipated and fewer wells had to be drilled than contemplated, offset wells were not located and this reduced the number of wells necessary and many other changes were constantly occurring with the result that stocks bought and carried with the idea of taking care of a drilling campaign were not needed.

It was quite often found that actual drilling operations could be materially changed as more wells were drilled and the contractor became more and more familiar with the formations and as a very large part, perhaps as much as 60 per cent, of the field warehouse stocks consisted of pipe and fittings it was very easy to make a major portion of such stock obsolete by changing a casing program.

Excess of Material

Following the active drilling campaign it was almost always found that there was an excess of material that had to be transferred out of one warehouse and moved to another, and this cost money and reduced the apparent saving due to quantity buying to a small margin, if any.

After the pool was on production, it was not necessary to keep on hand such large stocks of new supplies, but it was customary to always have available plenty of everything and the field warehouse man tried very hard to always have for immediate delivery that material for which the field men called. This made him popular with his co-workers and insured him against complaints, and consequently he worked very hard, indeed, trying to keep his stocks in such shapes that everyone would be satisfied.

Later checks of such practices by individuals perhaps a bit hard headed, and certainly lacking in sentiment, showed that these field men could get along with a lot less material than they had been accustomed to use if they did more physical labor in taking care of that which was intrusted to them. It was rather surprising to find how long small tools could be made to serve if a new supply was not always on hand in the warehouse for their requirements, and it was also observed that they got the production and held down the expense if the field warehouse carried less miscellaneous material than formerly.

Field Warehouses Discontinued

The development of these facts has led the major companies to reduce their warehouses and warehouse stocks to a minimum and by so doing to release for other purposes millions of dollars formerly tied up in frozen assets in the form of large stocks which were not moving and therefore unnecessary.

Field men were supplied with emergency order books and required to account to the home office for their purchases at the district supply stores, and it was then found that the volume of material bought dwindled down to a very small part of the amount formerly asked for on requisitions when wants were anticipated rather than actually developed. A field man will not go to a supply store and buy several hundred parts or fittings if he has to take the material back to the lease with him, for he does not have the facilities for transporting it in the first place and sees the folly of such quantity buying in the second. He does requisition his purchasing agent for his larger requirements and they are filled in the regular way.

This practice is leading to the need for better stocked district supply stores

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WATER INTRUSION IN EAST TEXAS AND ITS EFFECT ON GAS-OIL RATIO

By L. G. E. Bignell
Petroleum Engineering Editor

Recent reports from the wells in the East Texas Field show that the movement of salt water in the producing horizon has been definitely established and wells that have been produced without restriction have caused damage to offset wells that have been produced in accordance with the rulings of the Railroad Commission.

An example of this condition is reported as having been occasioned by the well of Upchurch and others known as No. 1 Brightwell in the Kilgore area being flown open for several weeks and as a result Humble Oil & Refining Co.'s No. 7 Crim, a north offset of this No. 1 Brightwell well, is now making from 5 to 10 per cent cut oil when flowing at the rate of 2,280 bbls. daily.

Another instance is cited on Humble Oil & Refining Co.'s No. 16 Crim, which is reported making better than 6,700 bbls. of oil daily and showing from 8 to 12 per cent basic sediment and water when opened up.

Other wells in this area report from 1 to 85 per cent b.s. and water when opened up and after water has made its appearance in a well it has always rapidly increased in volume, a condition that is going to make the cost of producing these wells and treating the cut oil greater in the future.

While the wells still flow in some parts of the Kilgore Pool, experimental gauges taken in that area show that an increasing volume of gas is being produced with the oil and at the same time there is a corresponding decline in bottom-hole pressure.

In gauges for five separate hours, the first test having been taken after the wells had been shut in 24 hours and the last taken after a 20-hour shutin period show that considerable more gas accompanied each barrel of oil produced the last hour than the first and that bottom-hole pressure had dropped more than 100 pounds per square inch.

After a one-day shutdown, Humble Oil & Refining Co.'s Uo. 1 Peterson flowed 318 bbls. of oil the first hour with 48,560 cubic feet of gas and the bottom-hole pressure was recorded as 1,450 pounds. This gives a gas-oil ratio of 152 feet of gas per barrel of oil.

During the last of the five hours' test and with 20 hours separating the fourth hour from the final test period, 1,972 bbls. of oil was accompanied by 560,450 cubic feet of gas, or a gas-oil ratio of 282 to 1. The bottom-hole pressure dropped to 1,340 pounds.

Production of oil, total gas, cubic feet of gas per barrel and bottom-hole pressure during the five-hour gauge on Humble No. 1 Peterson follows:

Production	Total gas	Gas per bbl.	Pressure (lbs.)
318	48,500	151	1,450
463	99,782	216	1,445
895	173,050	200	1,430
1,272	313,315	244	1,430
1,972	560,450	290	1,340

Question of Temperature

No data are given regarding either the temperature of the oil at the surface or underground. This additional information would be interesting, for in a recent paper before the Institution of Petroleum Technologists (London) entitled "Gas in Relation to Oil Production," B. J. Ellis states:

"The physical properties of gas and oil, together and separately, vary enormously with changes in pressure, temperature and the relation of their associated quantities. The viscosity, surface tension, specific gravity of oil, all of which have an effect on the mobility of the oil, change during production."

The water drive in the East Texas fields is undoubtedly playing an important part in moving this oil through the sand, and in another portion of his paper Ellis says:

"Under static conditions the water head will exert a definite pressure on the oil and gas in the dome. When the equilibrium is destroyed by puncturing the reservoir by a well or wells, flow will commence and will continue as long as the static head of water is greater than the static head of the oil, plus the friction of movement of the oil and water through the strata and the well to surface."

With the data already at hand there seems every reason to assume that flowing wells wide open, even for short periods, has had a marked effect upon underground conditions in the East Texas Field and offset wells that have been produced under prorated conditions have been injured by the poor practice of their offset neighbors who have disregarded not only the rulings of the railway commission but the lessons in good practice taught by producing other fields of this same character in the past. The immediate gain of a little extra oil is liable in the long run to mean the cutting off of a large quantity of this fluid underground, or of so mixing it with water that high additional costs will be necessary to prepare it for the pipe lines.

Car Manufacturers and Motor Fuels

By Changing "Plumbing" in Design of New Models, Quantity and Quality of Gasoline Obtainable Can Be Increased

By G. G. Oberfell
Research Department, Phillips Petroleum Co.*

From a technical point of view it can be safely stated that the problem of vapor lock has been solved. We now know what it is, what causes it and how it can be avoided. However, from an economic viewpoint it is far from being solved. It is believed that the automotive engineer does not fully realize that he alone holds the key to the solution of this latter phase of the problem, which after all is the most important one. Since a fuel with too high a vapor pressure will cause vapor lock and with too low a vapor pressure will have unsatisfactory starting qualities, it is evident that the design of the fuel system of the automobile must take into consideration these two opposing and very important factors.

The propane, butane and pentane fractions of motor fuel are the only ones that need to be given practical consideration as far as vapor locking difficulties are concerned, since they contain the only compounds with vapor pressures high enough to cause such troubles. The motor fuel manufacturer has realized for several years that the presence of propane in gasoline was an economic waste for the reason that for a given vapor pressure specification, three or four volumes of butane could be added for each volume of propane removed from the gasoline. To include propane, therefore, meant a reduction in yield of gasoline. The motor fuel manufacturer has also known for many years that the total amount of pentane available could be incorporated in the fuel without raising the vapor pressure of his finished product beyond the safe limit for satisfactory engine performance. This means, then, that to the motor fuel manufacturer the problem resolves itself into a consideration of butane alone, since economic conditions demand the elimination of propane and since the available supply of pentane is not sufficient to cause trouble. The benefits to be gained by increasing the butane content of motor fuel are: Improved ease of starting, acceleration and warming-up characteristics, better antiknock rating, and an economical increase in the gasoline supply. There is shown in Table 1 the estimated properties of the propane, butane and pentane fractions of motor fuel.

Highly heated fuel systems, which are the relics of bygone days, require gasoline with such low vapor pressure in order to prevent vapor lock that easy starting in cold weather is an impossibility. In connection with this statement there is shown in Table 2 a comparison of the properties of the butane-free base product of the petroleum industry as compared with the same product to which various amounts of butane have been added. About 10 to 15 years ago, when motor fuels were much less volatile than they are now, it was very difficult to obtain easy starting gasoline. Starting the "old bus" on a cold morning was a responsibility that was performed with much pride, skill and dexerity at each demonstration, but that novelty has worn off long ago. The most loyal car purchaser of today will no longer endure with patience poor starting characteristics in either car or gasoline. Since Table 2 forcibly brings out the fact that the ability to start the motor in cold weather depends solely upon the butane supply of the petroleum industry, it would appear that the temper and temperament of the all-American family depends entirely upon this lowly hydrocarbon.

*Discussion presented at annual meeting of Society of Automotive Engineers, White Sulphur Springs, W. Va.

Most of the increased vapor pressure of commercial gasoline of recent years has resulted from the increased use of cracking processes. Many refineries have installed efficient vapor recovery and stabilizing units, so that the maximum permissible quantity of butane can be saved while discarding propane for other uses. Under these circumstances the refiners find themselves with a surplus of butane, which in existing automotive fuel systems can not be included in the motor fuel. The writer estimates that, on the average, refiners have available sufficient butane to include about 9 per cent in their finished gasoline without using any butane derived from the natural gasoline industry.

The natural gasoline, which is blended with the refinery gasoline would add about 3 per cent, which would make a total of 12 per cent in the final product. This, of course, does not represent the entire potential supply, since additional amounts of butane could be extracted from the gas in the natural gasoline industry when economic conditions justify such a procedure. It is estimated, as shown in Table 3, that there are about 4,000,000 gallons of butane today that are being wastefully used at refineries and natural gasoline plants. The potential supply of the entire industry which is not being used is more than 6,000,000 gallons per day. With properly designed

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Paraffin Crude Oils for Antiknock

Various Crude Oils From Michigan Field Will Yield Motor Fuel of High Antiknock Value Through Cracking Process

By Gustav Egloff, E. F. Nelson and Paul Truesdell
Universal Oil Products Co.

Crude oils from the Michigan fields offer the cracking process a particularly good chance to show its mettle. Being almost purely paraffinic, gasoline made by straight distillation from Michigan crude tends to knock badly in automobile engines.

The cracking process produces gasoline of high antiknock value from Michigan oil. This can be accomplished in several ways, especially:

1. By cracking the topped crude to make a product of such high knock rating that blending it with the straightrun gasoline will give a motor fuel meeting acceptable knock rating standards.

2. By cracking the straightrun, badly knocking gasoline itself.

3. By cracking the crude oil.

Results from cracking tests run on oil from the Mount Pleasant Field are reported in this article. Like the other oils found in Michigan, it has a paraffin base, and straightrun gasoline made from it shows a low knock rating. Mount Pleasant crude is somewhat easier to refine than that from Muskegon, and the knock ratings of both the straightrun and cracked gasolines from Mount Pleasant oils are somewhat higher than the corresponding values for Muskegon products.

Crude oil of 41.2° A.P.I. gravity from Mount Pleasant Pool showed the following characteristics:

Sulphur, per cent	0.19
Coke, per cent by weight	1.70
Initial	134

Percent distilled over—	Temperature ° F.
5	188
10	228
20	298
30	366
40	444
50	506
60	582
Per cent over at 572° F.	59.0

The above oil was distilled at atmospheric pressure and six straightrun gasolines of varied distillation ranges were obtained, as follows:

STRAIGHTRUN GASOLINES

Gravity—	Initial	Endpoint	Per cent of crude
73.1	91	298	14.4
67.1	111	348	23.0
62.8	111	398	32.3
61.9	113	407	34.7
60.4	121	426	38.2
59.3	128	435	40.7

These gasolines were analyzed by the A.S.T.M. 100 cc. distillation method. The detailed data follow:

	1	2	3	4	5	6
Gravity	73.1	67.1	62.8	61.9	60.4	59.3
Initial, degrees	91	111	111	113	121	128
Per cent over—	Temperature, ° F.					
5	120	145	151	155	160	162
10	131	161	173	177	179	181
20	147	181	202	207	216	217
30	160	197	225	231	243	245
40	172	210	245	253	267	281
50	182	223	265	275	289	306
60	193	237	284	293	314	330
70	205	251	305	320	337	353
80	218	267	327	340	357	375
90	239	289	353	366	383	402
95	262	312	380	391	401	431
E. P.	298	348	398	407	426	435
Per cent over	96.5	96.5	97.0	97.0	98.0	95.0
Per cent bottoms	1.0	1.5	1.5	1.5	1.5	2.5
Per cent loss	2.5	2.0	1.5	1.5	0.5	0.5

Knock Rating Tests

The gasolines produced from the normal distillation of Mount Pleasant crude oil were subjected to motor tests using the Ethyl Gasoline Corp. new "Series 30" motor. The motor fuel used as a base to express the benzol equivalents was a Pennsylvania straightrun gasoline to which pure benzol was added on a volume basis in such amounts as to match the unknown fuel in the motor.

KNOCK RATINGS

Initial and endpoint gasoline, ° F.—	Per cent benzol equivalent	Octane number
91-298	38	62
111-348	25	41
111-398	—10	23
121-426	—20	18
128-435	—26	15

Cracking tests by the flashed residuum

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TABLE 1.—SUMMARY OF ANALYSES OF MICHIGAN CRUDES

Crude No.—	1	2	3	4	5	6	7	8	9
Part of State	Muskegon	Muskegon	Muskegon	Mt. Pleasant	Mt. Pleasant	Adrian Co.	Monroe Co.	Shiawassee Co.	Saginaw
Production level	Dundee	Dundee	Traverse	...	...	...	Dundee	...	...
Gravity	38.1	37.0	39.6	42.3	42.7	42.0	37.6	44.5	43.7
Color	Med. green	Dk. green	Dk. green	Green	Green	Green	Lt. green	Amber	...
Pourpoint, ° F.	0	Below 5	0	0	Below 0	Below 0	25	Below 0	...
B.s.&w., per cent	0.05	0.05	0.05	0.05	Trace	Trace	0.3	0.10	Trace
Water, per cent	Trace	Nil	Trace	Trace	Nil	Nil	0.3	Trace	...
Sulphur, per cent	1.056	0.98	0.563	0.137	0.306	...	0.35	0.13	0.26
Visc. at 100° F. (sec.)	...	...	...	...	...	...	51	35	...
Initial	139	...	121	110	...	...	180	114	135

A.S.T.M. 100 CC. DISTILLATION

Per cent distilled over—	Temperature, ° F.								
10	250	...	220	219	...	...	289	190	...
20	325	...	304	300	...	...	364	246	...
30	392	...	375	374	...	...	455	300	...
40	457	...	468	443	...	...	521	368	...
50	517	...	555	506	...	...	609	450	...
60	585	...	607	578	...	...	26% @ 420	530	...
70	617	...	661	618	...	...	37.5% @ 438	64% @ 572	...
80	677	...	705	665	...	...	38.5% @ 437	...	...
90	735	...	750	729	...	...	47.0% @ 572	...	...
E. P.	760	...	765	764	...	...	...	...	...

PRODUCT YIELDS—PER CENT OF CRUDE

Gasoline	36.8	35.6	39.4	41.5	38.5	34.7	29.0	49.0	47.0
Kerosene dist.	...	15.1	...	...	5.0	...	17.2	13.0	16.0
Gas oil	10.7	10.7	...	...	21.8	...	10.6	5.8	...
Lub. dist.	...	15.1	...	...	...	...	22.3	17.8	...
Wax dist.	...	...	...	...	13.7	...	...	...	...
Cylinder stock	...	...	...	...	15.0	...	20.5	13.2	...
Topped crude	51.9	22.8	58.3	57.4	...	62.3	...	...	35.7
Loss	1.3	0.7	2.3	1.1	3.0	3.0	0.4	1.2	1.3

Variable Cost of Steam Generation

Dependent Upon a Large Number of Factors, Whatever Fuel, Coal, Oil or Gas, Is Used. No Opportunity for Generalization

By P. McDonald Biddison
Consulting Engineer, Southern Natural Gas Corp.*

The cost of steam generation in any locality or given plant is dependent upon a large number of variable factors. An attempt to list and to indicate these factors affected by the class of fuel used is made in Table 1.

SUMMARY OF TABLE 1

Number of Factors Affecting Cost		
Type of firing—	Yes	No
Hand firing coal	35	1
Stoker firing coal	35	1
Pulverized coal firing	36	0
Oil firing	31	5
Gas firing	24	12

There are then listed above 35 or 36 factors affecting the cost of steam generation with coal, 31 affecting the cost with oil, and 24 with gas. Undoubtedly, there may be other factors which might be listed. Obviously with so many factors requiring consideration it is not a simple matter to establish a fuel conversion rate at which a steam generating plant can be converted from one to another type of fuel. The effect of many of the factors listed above vary through wide limits in rather similar installations on the same fuel and may vary more widely with different fuels. This paper will attempt no more than to point out some of the comparative ranges in cost and the effect of some of the more important of the above factors.

Heating Value of the Fuel

Steam coals may vary in heating value through wide limits as shown in Table 2.

Fuel oils vary in heating value with the gravity of the oil as indicated in Table 3.

TABLE 3—HEATING VALUE OF FUEL OIL

Gravity °Be.	Heating value dry basis B.t.u. per U.S.gal.
10	156,023
15	152,228
20	148,635
25	145,385
30	142,223

See Footnote 2.

Heating value of natural gas varies with the source and the treatment received after production and before transmission to markets. No attempt will be made here to tabulate the limits of heating values of various commercial natural gases. They have been marketed in large quantities with values as low as 700 B.t.u. per cubic foot and as high as 1,500 B.t.u. per cubic foot. The majority of natural gases now in use average close to 1,000 B.t.u. per cubic foot.

Shrinkage of Fuel in Transit

Natural gas is metered at delivery, upon which measurement are based the full and complete charges for the commodity consumed. Hence, in so far as the customer is concerned there is no loss in transit. Coal for steam plants, except for very small installations, is purchased f.o.b. mines and billed upon mine weights. Coal incurs a loss in transit from two sources: (1) Actual loss of coal through leaky hoppers and from off car tops, and (2) shrinkage in weight due to wash drippings and to evaporation of inherent and entrained moisture. These losses are borne ordinarily by the purchaser, both on the coal itself and, therefore, on the freight which is calculated on the mine shipping weight. These combined losses, depending upon moisture content when loaded, form of coal, distance hauled, type of country traversed, and weather conditions en route, may run from 1 to 10 per cent. In Mississippi and Georgia such losses vary from 3 to 7 per cent. In the shipment of fuel oil the losses in transit ordinarily are small. Measurement of a tank car contents upon shipment and upon delivery is comparatively simple and an adjustment is customary in case of any great disparity.

*Presented at annual meeting of Southern Gas Association, Chattanooga, Tenn. Acknowledgement is due to H. B. Biersdorfer and C. W. Merriam, Jr., of Southern Natural Gas Corp. for assembly and computation of the data and aid in preparation of this paper.

TABLE 1—FACTORS AFFECTING COST OF STEAM GENERATION

		Coal	Oil	Gas
1.	Cost of fuel per unit	yes	yes	yes
2.	Heating value of fuel as fired	yes	yes	yes
3.	Shrinkage of fuel in transit	yes	yes	no
4.	Cost of fuel storage	yes	yes	no
5.	Loss of fuel in storage	yes	yes	no
6.	Fuel handling labor	yes	yes	no
7.	Refuse handling labor	yes	no	no
8.	Fuel preparation	(*)	no	no
9.	Firing supervision	yes	yes	yes
10.	Power consumption for firing	yes	yes	no
11.	Condition of water surfaces of tubes	yes	yes	yes
12.	Condition of fire surfaces of tubes	yes	yes	yes
13.	Draft conditions	yes	yes	yes
14.	Baffling arrangements	yes	yes	yes
15.	Size of installation	yes	yes	yes
16.	Size of units in installation	yes	yes	yes
17.	Type of units	yes	yes	yes
18.	Arrangements of units	yes	yes	yes
19.	Condition of brick work	yes	yes	yes
20.	Maintenance of furnace	yes	yes	yes
21.	Maintenance of tubes and shells	yes	yes	yes
22.	Maintenance of fuel handling equipment	yes	yes	no
23.	Maintenance of fuel preparation equipment	yes	yes	no
24.	Maintenance of fuel burning equipment	yes	yes	yes
25.	Maintenance of refuse handling equipment	yes	no	no
26.	Stack losses	yes	yes	yes
27.	Radiation losses	yes	yes	yes
28.	Fuel losses to ash pits	yes	no	no
29.	Sensible heat in ashes	yes	no	no
30.	Load factor	yes	yes	yes
31.	Use factor	yes	yes	yes
32.	Maximum rating required	yes	yes	yes
33.	Ratio of combustion space to developed load	yes	yes	yes
34.	Time element required to supply steam demands	yes	yes	yes
35.	Feedwater temperature	yes	yes	yes
36.	Steam temperature	yes	yes	yes

*Dependent on firing method.

TABLE 2—HEATING VALUE OF COAL

Coal classification—	B.t.u. per lb. of fuel — Combustible Basis		As Fired Basis	
Anthracite	15,025	15,413	12,782	14,182
Semianthracite	15,176	15,431	11,570	14,344
Semibituminous	15,363	15,939	12,701	14,821
Cannel	14,918	16,176	10,355	15,330
Bituminous	13,134	15,630	9,396	14,315
Sub bituminous	11,972	14,891	7,783	10,897
Lignite	12,017	13,043	6,035	8,735

See Footnote 1.

Cost of Fuel Storage

In coal and oil fired plants storage space must be provided, but none is required for natural gas since this fuel is delivered as required. For other fuels the location of the plant, the nature of the business, the plant size, the transportation facilities, and the general economic and labor conditions of the area, all have a bearing on the amount of coal or oil fuel it is necessary to have readily and, therefore, in storage. A large plant at a considerable distance from the source of fuel supply must have a larger reserve than plants more favorably situated. An amount adequate to insure uninterrupted operation must be stored. A utility, upon whom the public depends for uninterrupted service or a manufacturer whose losses would be heavy because of interruption of production would, unless unusually favorably situated with regard to reliability of supply and of transportation, store at least several weeks' supply of fuel and usually three months or more reserve. For coal a three months' supply for a plant using 500 tons per day at a cost of $3 per ton involves working capital of $135,000 on which interest at 6 per cent per annum is $8,100 or $0.044 per ton of coal used. This covers interest only. If the period for which storage be provided be more or less than three months or the cost of fuel more or less than $3 per ton, interest charges will be proportional. For a large plant the cost of stacking coal in well designed storage piles may run 2 cents per ton with an additional 2 cents per ton for reclaiming. In a small plant with manual labor only, the cost of unloading and stacking coal, however, may run 50 cents per ton. Even if unloaded from bottom dump cars on a trestle the cost of stacking may run from 2 to 5 cents per ton.

For oil fired plants of the same size the fuel consumption per day would be roughly

$$\frac{500 \text{ tons} \times 13{,}500 \times 2{,}000 \times \text{efficiency}}{6{,}000{,}000 \times \text{efficiency on oil}} =$$

2,100 bbls. per day.

The working capital tied up in a 90-day supply at $1 per barrel is then $189,000, while about 50 per cent additional cost would be required for the tankage in which to store it. At 6 per cent the interest on the working capital amounts to $11,340 per year or $0.0148 per barrel of oil used. If the period for which storage be provided be more or less than three months or the cost of oil be more or less than $1, interest charges will be in proportion.

Loss of Fuel in Storage

For natural gas there are no losses from this source. For oil there is a loss due to the formation of sludge which may amount to 0.1 to 0.5 of 1 per cent and a risk of loss by fire which may be insured against at a nominal cost for usual fuel oils. In the case of coal there is a definite loss in heating value in storage, the loss depending upon the nature and fineness of the coal, and the time of storage. For commercial storage it will probably not exceed 1 per cent, though figures much higher may be cited from tests and from various authorities[5]. In addition coal has the hazard of loss by spontaneous combustion.

Purchasing agents, in an effort to secure and store large volumes of coal or oil during seasonal price deflations, often overlook the added increment of cost due to tied up working capital, loss in heating value and fire hazard.

Fuel Handling Labor

There are no such costs for natural gas, and for oil are small. In coal plants the fuel handling method is governed largely by the type of firing employed, which in turn is determined by the size of the plant. In small plants hand firing is common, larger plants use stokers of various types and in some of the recent very large installations powdered fuel is used (and to some extent in plants as small as 400 horsepower).

The labor cost of hand firing in small plants is 40 to 45 cents per ton. Although this seems high the maintenance and interest charges on coal handling equipment would in most small plants more than offset the calculated labor saving. Larger plants using well designed coal handling equipment are able to reduce their labor costs to 8 to 12 cents per ton, while for large central stations it may not exceed 4 cents per ton[4].

Refuse Handling Labor

For small plants ash handling costs may amount to as much as 25 cents per ton of ash[4a], while on large plants it may be only 0.5 to 5 cents per ton of ash with good apparatus. It may, under conditions of sale for fill or other purposes be a source of revenue.

Smoke abatement authorities are concerned vitally, among other things with the elimination of sulphuric acid and fly-ash emissions from large pulverized fuel installations in or near large population centers. Research work on this problem is not advanced sufficiently to determine practical cost trends other than to establish that such costs may mount as high as 25 cents per ton of coal fired.

Natural gas is a naturally prepared fuel and oil requires no preparation if the expense of heating to keep oil mobile is counted as part of other costs. Preparation of coal may be required, but usually only for pulverized fuel installations. A. E. Douglas presented the following average costs in a number of modern plants at the 1924 World Power Conference[3], which do not include fixed charges but do include labor, repairs, operating materials, power, and supervision.

Capacity in tons per day—	100	150	200	400	500	1,000
Cost per ton bituminous coal	$0.45	$0.41	$0.40	$0.36	$0.34	$0.316
Cost per ton anthracite or high ash	0.63	0.55	0.53	0.40	0.45	0.43

Since 1924 equipment improvements have reduced fuel preparation costs materially to a point where 10 cents per ton represents excellent practice today in central generating plants. Maintenance figures for pulverizers are exemplified by plant figures for 1928 on 204,448 tons with a weighted average maintenance cost of 4.89 cents per ton of coal[12].

Firing Supervision

The labor of handling has been discussed above. In small plants labor embraces the whole plan of firing. In large plants more supervision will be required for coal firing than for oil or gas firing, but this is not an important item of relative costs.

Power Consumption for Firing

For natural gas no power is required normally for firing. For stokers the power runs from 1 horsepower for small chain grates to 25 horsepower for large underfeed designs with clinker grinders[9]. Ordinarily the stokers now in service require about 6 per cent of the steam generated for their operation[7]. On $3 coal this amounts to 18 cents per ton of coal fired. Modern apparatus may reduce stoker steam requirements to as low as 1.5 per cent, or 4.5 cents per ton. For

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Suggests Plan for Orderly Development

Policy of Priority for Correction and Regulation of Amount of Crude Oil Received, Handled and Delivered by Pipe Lines

By Kenneth L. Wickett

The present depressed condition of the oil industry has caused a great deal of comment and has brought forth a great many suggestions as to how to correct this situation. Many of these suggestions are worthy and have, to some degree, when put into practice been an alleviating influence, but no method advanced or tried out to date has been the cure-all that the industry had hoped for.

The problems facing the oil industry are not only of concern to those engaged in this business, but to the nation and the world at large, as the oil industry probably comes into more intimate contact with a greater number of people than any other business, with the exception, possibly, of the purveying and supplying of foodstuffs; it is, therefore, more susceptible to public opinion and pressure, especially if the ultimate cost to the consumer is advanced, which will be the case if the wasteful exploitation and dissipation of our oil resources continues in the present uneconomic manner.

Fudamental Causes

Checking into the fundamental causes of the present status of the oil business in a logical manner, several irrefutable facts are brought to light; firstly, it is generally accepted that in the long run the natural economic laws of supply and demand will prevail; therefore, if there is overproduction of any commodity the price naturally declines, correspondingly or in ratio. For a time the natural price level or value of any commodity may be depressed or sustained by artificial means, but in the long run the natural and irrefutable economic laws will prevail. Therefore, if an unrestricted overproduction is allowed to continue, a lower price level is the natural result and that is the condition prevailing in the oil industry today. As the heart and lungs are dependent upon each other, and so closely intermingled are their functions in the well being of the human body, so production or the producing of crude oil, refining (or manufacturing) and the sales are correspondingly interwoven and intermingled and the well being of one has a very direct and vital bearing on the well being of the other closely correlated branches of this business.

We have an overproduction of crude oil—an admitted fact; we have an overproduction of refined products, partly due to overproduction of crude and partly due to the advances in the science of refining in recent years and the increased yield obtained by an improved efficiency, and we have an overexpansion of sales outlets occasioned by an excess of products to be disposed of, and partly due to the efforts of various units in the oil industry to round themselves out and to possess their own sales outlets.

Remedies Suggested

To correct the present depressed conditions prevalent in the oil industry, conservation (by which is meant voluntary agreements to control production), proration and unitization have been adopted; all in themselves worthy, but they have not accomplished their intended purpose; also reductions in the price of crude have been resorted to, in an effort to curtail production, but in spite of these various corrective measures crude production continues to mount and it is, therefore, plainly evident that a satisfactory solution, to date, has not been reached.

It has been stated that a tariff on crude oil and refined products would solve the problem, in so far as it pertains to the producer of crude oil in the United States; logically, the producer of crude oil in the United States is entitled to tariff protection as a matter of equity, if a tariff is justified on leather, cement, lumber, steel, etc. The passing of an oil tariff measure might have a temporary beneficial, psychological effect, but if the amount of crude oil now being produced in the United States, plus potential production in sight, should continue to be produced unabated, the same price situation would prevail in the future as prevails now, with the added possibility that our exports would be faced with retaliatory measures brought into effect in other countries.

But, seemingly, none of these measures in themselves, or in toto, have been

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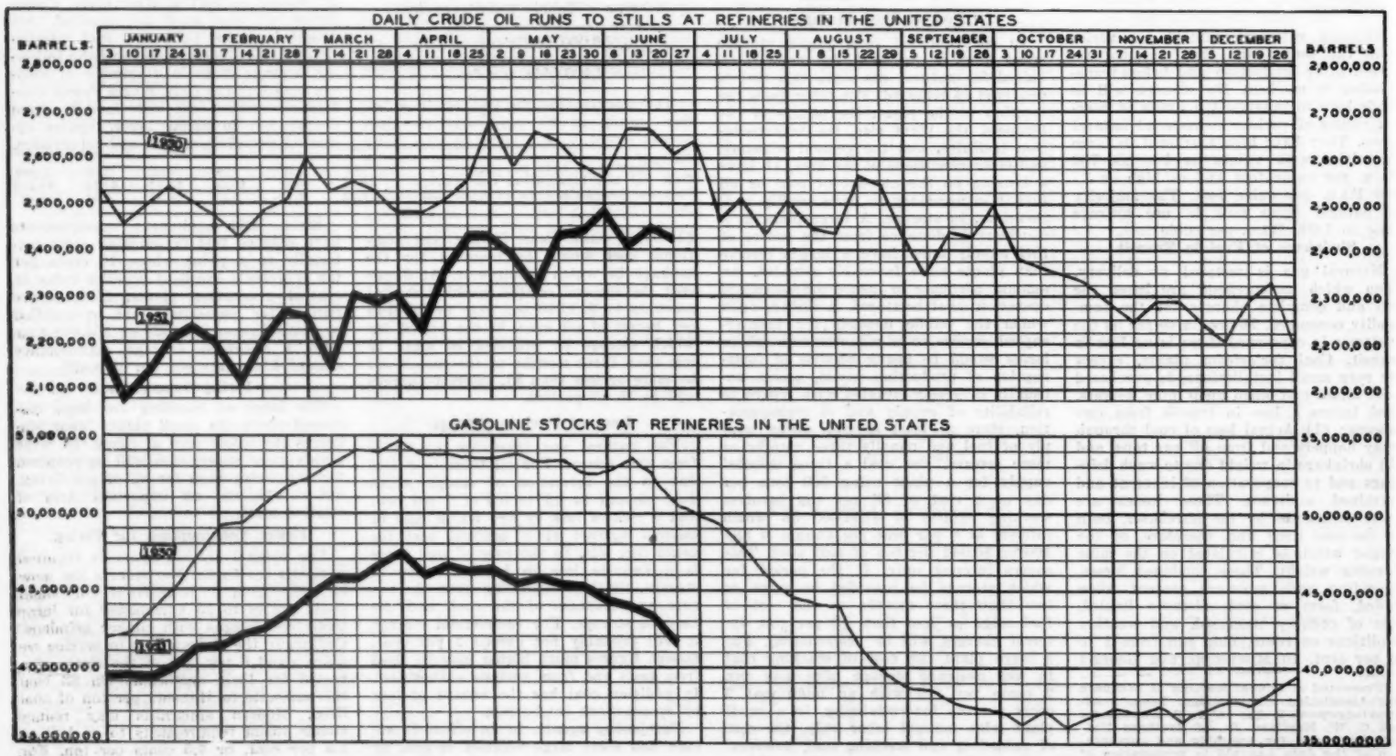
AMERICAN PETROLEUM INSTITUTE WEEKLY REFINERY STATISTICS

The weekly report made to the American Petroleum Institute on refinery statistics—crude runs to still, gasoline stocks and gas and fuel oil stocks in barrels—for the week ending June 27.

	Week ended June 27				Week ending June 20, 1931				Week ending June 28, 1930			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	100.0	461,300	7,558,000	9,424,000	100.0	502,100	7,655,000	9,238,000	100.0	497,400	8,163,000	9,208,000
Appalachian	91.8	108,300	1,558,000	1,235,000	91.8	89,900	1,521,000	1,219,000	91.0	73,000	1,638,000	882,000
Indiana, Illinois, Kentucky	96.6	321,300	6,311,000	3,766,000	96.6	324,600	6,276,000	3,693,000	99.6	320,700	8,067,000	4,190,000
Oklahoma, Kansas, Missouri	89.6	282,300	3,284,000	4,692,000	89.6	264,700	3,486,000	4,581,000	89 9	295,300	4,609,000	4,715,000
Texas	91.3	547,100	7,927,000	10,342,000	91.3	534,400	7,862,000	10,202,000	90.4	607,900	6,802,000	10,444,000
Louisiana and Arkansas	98.9	177,600	1,541,000	2,602,000	98.9	181,400	1,834,000	2,439,000	96 8	170,000	2,467,000	1,929,000
Rocky Mountain	89.3	46,100	1,833,000	862,000	89.3	60,600	1,878,000	860,000	93.6	65,700	2,704,000	1,196,000
California	96.5	472,900	11,856,000	98,122,000	96.5	476,400	11,470,000	98,019,000	99.3	592,400	15,250,000	106,873,000
Total United States	94.7	2,416,900	41,868,000	131,045,000	94.7	2,434,100	41,982,000	130,251,000	95.7	2,627,400	49,700,000	139,437,000
Texas Gulf Coast	99.8	414,600	6,777,000	7,377,000	99.8	395,600	6,637,000	7,225,000	100.0	452,600	5,606,000	7,466,000
Louisiana Gulf Coast	100.0	118,900	1,433,000	1,662,000	100.0	121,900	1,704,000	1,522,000	100.0	114,900	2,066,000	1,135,000

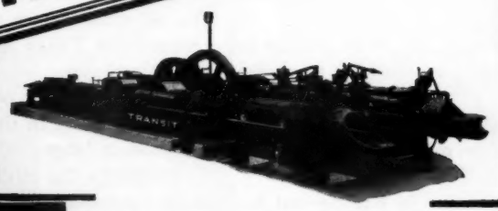
(1) Per cent refinery capacity represented. (2) Daily crude runs to stills. (3) Gasoline stocks. (4) Gas and fuel oil stocks.



Data for 1931 based on weekly reports of the American Petroleum Institute. Figures for last week not shown in graph but are included in above tables.

Desertion under fire!
—WHEN THEY NEED HIM MOST

Not this fellow



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GAS ENGINE DRIVEN
HOT OIL
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There must be no compromise with reliability— there must be no desertion of duty—when the service is pumping hot oil.

TRANSIT Hot Oil PUMPS give that steady uniform flow that is so essential to successful cracking; and they do it economically.

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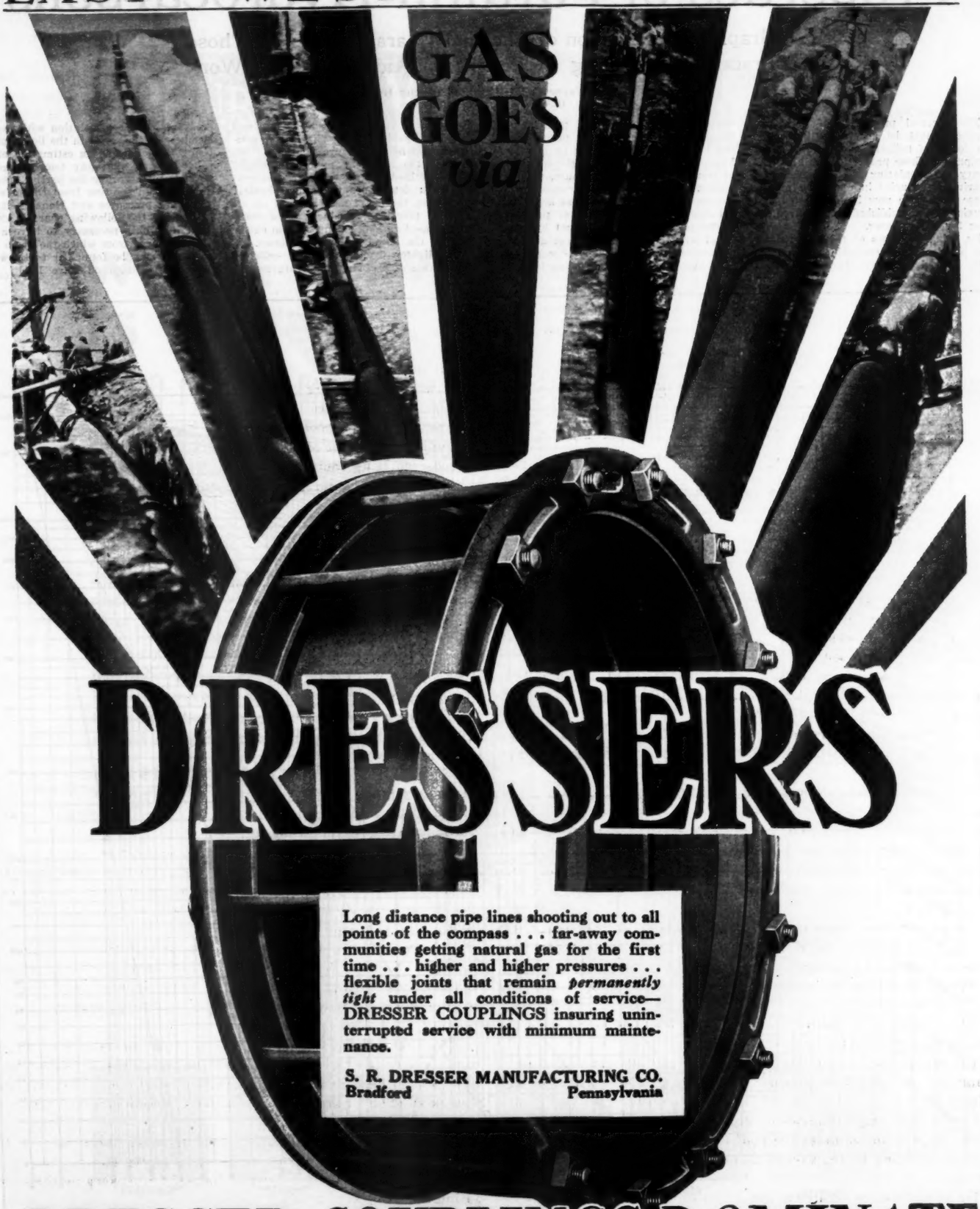
GAS GOES *via*



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DRESSER COUPLINGS DOMINATE

Properties of Paraffin Hydrocarbons

Graphic Presentation of Thermal Characteristics of Those Fractions Occurring in Petroleum Aids in Design Work

By Wayne C. Edmister and Charles Buskel
Oklahoma A. and M. College

The thermal properties of petroleum products must be accurately known in the design of refinery and gasoline plant equipment. These properties are also necessary in calculating heat balances and figuring efficiencies in operating plants. These data have now been collected and correlated and published in a convenient form for the engineer.

By using the laws of thermodynamics and physical data available a chart has been worked out with these properties correlated as functions of pressure and temperature. The thermal properties of the hydrocarbons occurring in petroleum have been considered from the standpoint of temperature, vapor pressure, apparent molecular weights, vapor concentration, entropy of vaporization, latent heat, critical temperatures and critical pressures.

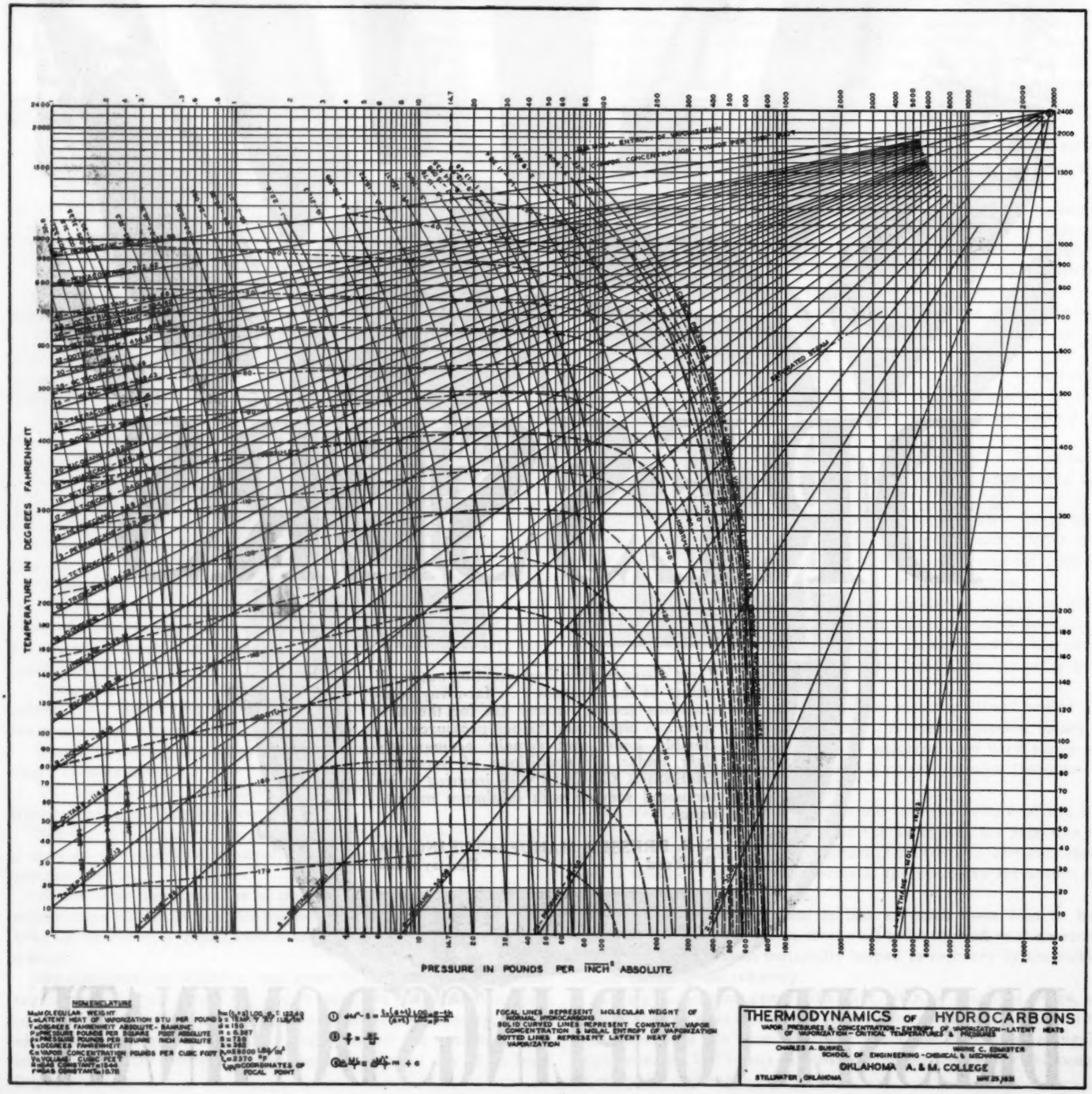
The paraffin series (normal hydrocarbons) are the most important group of petroleum compounds. They are also the most systematic; each differing from the one below it in the series by CH_2. From this it is evident their physical properties should be just as systematic.

Since the apparent molecular weight as determined by the pressure-temperature data determines the other physical properties, the chart may be used on all types of petroleum products. This chart may be used as long as equilibrium exists between the liquid and vapor phases.

The lighter fractions cannot exist in liquid state at ordinary temperatures and pressures except in solution with heavier members of the series in the liquid phase. Using this chart as an estimation of the vapor pressures at any temperature we are able to determine the partial pressure they exert in solution from Dalton's law of partial pressures and Raoult's law.

In using the following chart in design work it is only necessary to have a distillation curve from which the mean boiling point may be found, or to know the

(Continued on Page 124)


TEMPERATURE IN DEGREES FAHRENHEIT
PRESSURE IN POUNDS PER INCH² ABSOLUTE
NOMENCLATURE
THERMODYNAMICS OF HYDROCARBONS
VAPOR PRESSURES & CONCENTRATIONS - ENTROPY OF VAPORIZATION - LATENT HEATS OF VAPORIZATION - CRITICAL TEMPERATURES & PRESSURES
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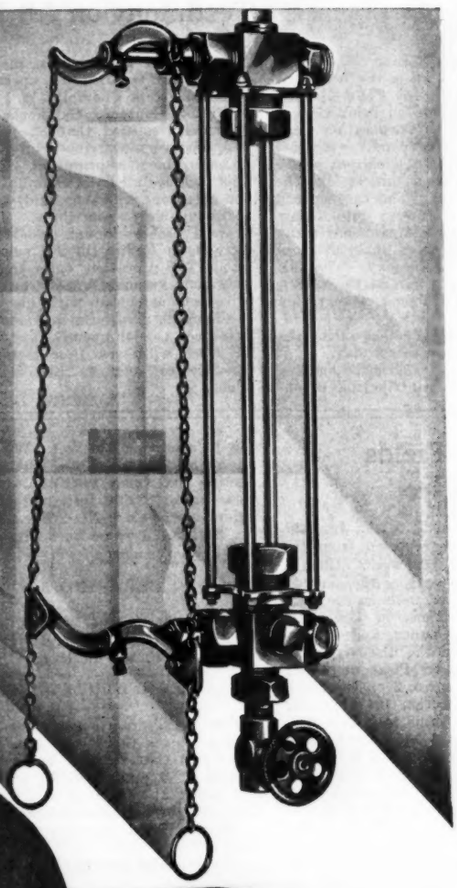
WHERE SERVICE IS SEVERE USE THE PENBERTHY NAVY TYPE GAGE



THE Penberthy Navy Type Gage is of extra heavy construction throughout. Its dependable operation results from its exceptionally rugged design, careful workmanship and the fact that it is made from new metal. These are important reasons why this gage is so generally preferred in the refinery, the natural gasoline plant . . . in fact, wherever conditions are severe.

These characteristics are not peculiar to the Penberthy Navy Type Gage . . . they apply equally to Penberthy injectors, lubricating devices and other types of Penberthy gages. Penberthy Products are carried in stock by supply houses everywhere.

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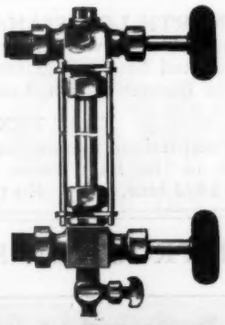
Established in 1886 DETROIT Canadian Plant Windsor, Ont.



"SURE-DROP"

"SENTRY"

"SATURN"

"SCREW TOP"

"SILEX"

"SAMSON"

Call Many Witnesses in Champlin Case

Federal Judges at Guthrie Throw the Case Open to Testimony on All Phases of the Proration Question

GUTHRIE, Okla., June 30.—Three federal judges are hearing the testimony in the case in which the Champlin Refining Co. is suing for an injunction to prevent the Oklahoma Corporation Commission from enforcing penalties against the company for alleged violation of the commission's proration orders in the Oklahoma City Field. The case opened on Monday and continued into today, and as the Champlin company has many witnesses to present it is likely the case will go over into Wednesday. The suit also involves the question of the constitutionality of the Oklahoma conservation law.

Three witnesses were called during the morning session of the second day.

State Umpire Ray Collins submitted a list of companies contributing to enforcement of proration in the Seminole Field. He testified all operators contributed except Champlin.

Frank Couzens, Oklahoma City oil operator, testified that 82 per cent of the producers contribute proportionately to enforcement of proration. He testified this included all but Champlin and town-lot operators whom he said were financially unable to contribute.

A. P. Cheesebrough, assistant treasurer of the Carter Oil Co., which collects funds for proration enforcement, testified that estimates made by the other witnesses coincided with his records.

Champlin attorneys announced as the afternoon session opened, they would call 28 more witnesses, thus making it impossible to conclude the hearings tonight.

Otto Bradford, umpire of the Oklahoma City Field, subpoenaed as a witness, could not be found when he was called. He had been taken to a Tulsa hospital after being stricken last night.

Taking the stand that the Champlin suit attacks the entire structure of proration in Oklahoma, the three judges early yesterday threw the question open to allow testimony on all phases.

The court denied application of three companies, the Phillips Petroleum, Anderson-Prichard and Slick-Urschel, to intervene in the Champlin case on the contention that their offset properties were being damaged by continued operation of Champlin wells despite proration orders.

The principal witness last night was Ray M. Collins, state proration umpire, who recited the history of his connection with proration since the formation of the first committee in Seminole in October, 1926.

Only three witnesses were heard during the night session. Of the other two, Ernest J. Slater of the Champlin company, testified as to storage capacity and nature and quality of products of the company.

H. M. Stalcup, Skelly Oil Co. official, Tulsa, testified that there was a wide variation between wells of the Oklahoma City Field in the ratio of gas produced with each barrel of oil.

Stalcup said a survey revealed some wells produced 300 to 400 feet of gas to each barrel of oil, while others produced "several hundred thousand" feet of gas per barrel of crude.

Late Fields

MICHIGAN

MOUNT PLEASANT, Mich., June 29. No completions were reported from the Michigan Fields for the week, although there are a number nearing the sand in the vicinity of the good wells on the Harnick and Skinner farms in Greendale Township, Midland County, and approximately 2 miles from the discovery well of the Midland-Mount Pleasant Field. The Gordon Oil Co.'s No. 2 on the Noah Skinner, SW SE Section 9, is getting close to the Dundee formation. This well hit the Traverse sand at around 2,000 feet and made a flow of 65 bbls. and there is estimated to be 2,000 feet of oil in the hole, which retards completion of the well to the Dundee formation for at least 10 days or more. There is about 500 feet of brine in the hole along with the oil and the depth of the hole at this writing is around 3,200 feet. W. L. Clanahan's test on the A. J. Struble, SW SE Section 10, same township, is drilling close around 2,300 feet, and Kalamazoo Improvement Co.'s No. 2 Fred McLaughlin, Section 15, same township, is around 1,400 feet.

OKLAHOMA

The discovery well in the North Seminole area, drilled by R. H. Pierce and

(Continued on Page 120)

MAGNETIC STORM

Tucson, Ariz., observatory of the United States Coast and Geodetic Survey report that a severe magnetic storm started at 9 a.m. (C.S.T.) on June 26 and ended at 8 a.m. (C.S.T.) June 29. Their telegrams read as follows:

"Storm began twenty-sixth. Fifteen. Severe."

"Storm ended twenty-ninth. Fourteen."

SCORE SHEET ON OIL PRODUCTION

Below is shown the allotted average daily production in the United States from April 1 to October 1, 1931, suggested by the Oil States Advisory Committee, and the actual daily average production in the week ending June 27:

	Barrels			
	Allotted	Actual	Over	Under
Texas	714,000	978,714	264,714	.....
California	500,000	510,250	10,250	.....
New Mexico	40,000	44,825	4,825	.....
Eastern Fields	110,000	110,500	500	.....
Oklahoma	550,000	543,750	.....	6,250
Louisiana	65,000	58,940	.....	6,060
Kansas	110,000	101,840	.....	8,160
Arkansas	50,000	44,220	.....	5,780
Rocky Mountain Fields	60,000	52,432	.....	7,568
Total	2,199,000	2,445,471	280,289	33,818

Total net daily overproduction 246,471 bbls.

High Spots in Field News

GULF COAST

Second well at Clear Lake. Three new coastal fields discovered within month will be based on unit operation.

KANSAS

Ritz-Canton operators prepare for market when new pipe line outlet is ready for oil. New Reno County gasser.

WEST TEXAS

Schleicher County and Howard County wildcats interest fraternity. Gas and oil showing in Gaines County test.

OKLAHOMA

Increased demand reported. Production increased from 6 to 10 per cent of rated potential for last four days in June.

SOUTHWEST TEXAS

Guadalupe County has interesting showing. Looks like another Edwards lime pool. New sands in Kerr-Real Counties.

ROCKY MOUNTAIN AREA

Hobbs Pool proration continued. Berthoud Dome test has gas. New Boulder County wildcat. Utah wildcat to drill deeper.

CALIFORNIA

Outlook still uncertain. Existing prices will not be maintained unless conditions are improved and unethical practices cease.

NORTH LOUISIANA-ARKANSAS

Shelby County, Texas, well in unproven territory blows in as wild gasser estimated between 20,000,000 and 30,000,000 feet. New field indicated in Bossier Parish, Louisiana.

EAST TEXAS

Number of completions reaches new record. There are now 975 producing wells in the East Texas area. Distribution for week shows drop of 21,822 bbls. daily. No proration plan being followed.

FLEET OF TRUCKS CARRYING PIPE LINE CONSTRUCTION EQUIPMENT

Thirteen trucks carrying pipe line construction equipment for Sheehan Pipe Line Construction Co. leaving Tulsa on way to contract in Illinois. Brokaw, Dixon, Garner & McKee, supervising engineers for the construction of the 1,000-mile Panhandle Eastern pipe line from the natural gas fields of Texas to Oklahoma, Kansas, Illinois and western Indiana, announced Monday that contracts for the building of lateral lines connecting Jacksonville, Decatur, Champaign and Danville, Ill., with the main line have been signed with the Sheehan Pipe Line Construction Co. of Tulsa. Work is to start at once and the schedule calls for the servicing of these cities with natural gas by August 15.

FOR PERFECT PERFORMANCE

FISH TAIL BIT

Fish Tail Bit

American Fish Tail Bit is an improvement over the conventional design of rotary drilling bits. It is especially adapted for drilling gumbo or soft formation. The water courses extend through the entire body of the bit with the outlet on the blade just above the cutting edge, which prevents the bit from balling up and actually does cut your spudding down to a minimum. This superior feature hastens the mixing of cuttings and assures the rise of mud in the hole.

American Fish Tail Bits are designed and constructed to make more hole every time run and will reduce the round trips 50%, this keeps the pipe in the hole instead of on the way out and back into the hole. Consider the fact that it reduces labor, drilling time, expense and speeds up production.

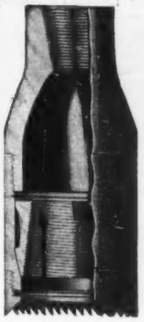
TAPERED TAP

Tapered Tap

American tapered taps are forged from the best grade of steel, and heat treated, designed with slow graduated taper for taking firm hold. Made in three steps for catching coupling, pipe, and tool joint. These tapered taps will bend before they will break.

ROCK BIT CONE FISHING SOCKET

Now you will be able to get the lost cones with this tool regardless of how much they may be worn. Get to the bottom of the hole, rotate the socket and you will soon have the cone. This socket is built strong and sturdy, can be spudded through bridges or rotated through boulders without damage. The mill on the American Socket may be replaced if teeth are worn off.


Rock Bit Cone Fishing Socket

ROCK BIT BREAKOUT BLOCK

Fits in your rotary table. It is truly the one and only tool of its kind available for drilling purposes. You can depend upon it to hold the bit firmly in place while breaking joints, which enables you to make greater speed with safety for the men on the rig. This tool also offers protection against losing or damaging rock bits while breaking joints. Drain holes in the bottom also permit water and slush to drain back into the hole. This American breakout block and bushings are made to fit any size bits. Made of steel for strength and wear. Tools cannot get through the table while the block is in place.

Rock Bit Breakout Block

Exclusive Distributors

ARIZONA TRADE MARK

Mid-Continent Area

AMERICAN IRON & MACHINE WORKS CO.

OKLAHOMA CITY, U. S. A.

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American Forged Steel Drill Collars
American Female Die Nipples
American Releasing and Circulating Spears

American Tapered Taps
American Forged Steel Subs
American Rotary Shoes
American Cone Fishing Baskets
American Steam Lubricators
American Side Tracking Mills
American Combination Reverse and Throttle Levers
American Steel Engine Foundations
American Automatic Cat Head
American Rock Bit Vises
American Rotary Milling Tools
American Myracle Sucker Rod Sockets
American Surface Bit Blades for Rock Bits

American Drill Pipe Float Joints
American Casing Suspender and Blowout Preventer
American Lead Plug
American Rock Bit Cone Fishing Sockets
American Steel Whipstocks
American Inside Pipe Cutter for Drill Pipe or Casing
American Adjustable Steel Rig Braces
American Fish Tail Bits
American Pipe Rackers
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American Shot Packed Barrel
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AMERICAN PRODUCTS SOLD THROUGH LEADING SUPPLY STORES

East Texas Makes Completion Record

Now 975 Producing Wells in the District. Practically All Major Purchasers Meet the 20-Cent Posting

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., June 29.—There are now 975 producers in Rusk, Gregg, Smith and Upshur Counties, East Texas, distribution during the week ending June 24 showing a drop of 21,822 bbls. daily in pipe line shipments as of the past week, declining from 224,962 bbls. daily to 203,140 bbls. daily. Tank car shipments increased from 105,757 bbls. daily to 114,296 bbls. daily during the same period, while shipments to refineries fell from 25,372 bbls. to 24,921 bbls. Runs to local storage increased from 15,362 bbls. to 17,370 bbls.

Total daily distribution for the week ending June 24 was 359,727 bbls. daily, compared with 371,362 bbls. daily during the previous week.

The week ending June 23 showed the Longview or Lathrop area in Gregg County having 166 producers, producing 82,195 bbls. per day; the Joiner area had 385 wells producing 114,438 bbls. per day, and the Kilgore area 424 wells with 163,094 bbls. per day. This makes a total of 975 wells making 359,727 bbls. per day.

There were more producers completed in the East Texas district this week than during any previous week. No one proration plan is being followed and adhered to by the many operators and companies in the field, but taking an average the wells are producing but slightly over 360 bbls. per day each, or only 60 bbls. over the 300-bbl. allowable as designated in the Cranfill plan. However, some of the wells are producing far below the 300-bbl. limit, and others are producing on open flow, and making far more than 300 bbls. per day.

It is interesting to know that on April 8 there were only 175 producing wells in the East Texas district; on May 6 there were 390 producers, on June 10 there were 781 producers and on June 23 there were 975 producing wells in the district, showing how activities continued to gain in the district, and how rapidly the wells were completed.

Speedy Drilling

Drilling conditions in the district are extremely favorable, lending support to the hurried completion of the wells, and this was proved by one contractor this week when his crew drilled 965 feet in 12 hours after surface casing was set at 260 feet. The well belongs to the Amerada Petroleum Corp. and is on the Bumpas farm in the Castleberry Survey, Gregg County. Carl Short is the drilling contractor on the well.

Safety, however, has been sacrificed to speed in drilling some of the wells in East Texas, and as a result some of them have caught fire, causing loss of life, derricks have been pulled in, and other serious and fatal accidents have happened, but which have apparently gone unnoticed by other operators who have in turn had the same accidents duplicated on their leases. Safety of men is little considered in this district, except in the case of some of the major companies who maintain safety departments, and preach safety to their men.

During the week two more wells caught fire in the district, and continue to blaze at this writing, with four oil-well fire fighters at the scenes trying to cope with the terrific blaze and heat. One of these fires is at the Bell and Grady No. 1 Stumpf, north of Kilgore, and the other fire is on the Tulsa Oil Corp.'s well near Overton. Two men were painfully but not seriously burned in the latter fire, and none was injured in the former. F. T. Kinley of Tulsa is supervising the fighting of the Overton fire, while B. F. "Blackie" De Long is trying to tame the Kilgore fire. Neither of the fighters has had much luck to date, meeting with various obstacles which have continued to handicap them in their work. Tex Thornton, fire fighter of Amarillo, is now looking over the fires and may be called upon by the Railroad Commission to take a hand. With crude selling for the price it now is in the district many thousands of barrels will have to be produced by the wells and leases to pay for these fires even if snuffed out at once, and it now appears as if they would burn many days before being brought under control.

This building was first constructed for a house of worship in the town of Kilgore, but the coming of oil to the area brought about a great change, and when the first raid of the Texas Rangers upon the undesirable elements of the town was made, the church was transformed into a temporary "bastile," and over 200 shady characters have entered its portals, some of them destined for immediate release while others will be kept in confinement for many months to come. At the present time the building is used for a dance hall, as shown by the advertisement nailed on the side. These changes made on one establishment reflects the many transformations which the discovery of oil brings to a small or large settlement in any part of the country.

Extension North of Gladewater

Stanolind Oil & Gas Co.'s and Weaver's No. 1 Everett in the Goodman Survey, 1¼ miles north of Gladewater in Upshur County, made a considerable extension this week when it came in making 104 bbls. the first hour through 2-incl. tubing, flowing open, showing no water. Total depth is 3,619 feet, and the oil sand was topped at 3,612 feet. It was later reported that the well was making 6 per cent b.s. and salt water.

Taxman and others' No. 1 Mrs. Ann Callahan in the A. J. Evans Survey, approximately 2¼ miles north of Gladewater, extended production still further this week when it tested 7 fourbles of oil in five minutes on a drill stem test. Total depth of the test is 3,712 feet. It is now coring ahead, and will be completed during the week, proving more acreage to production in southern Upshur County, and extending the area of the Lathrop and Gladewater Pools.

Chapmán's No. 1 Russell in the J. English Survey, Rush County, southwest of the Kilgore area, has the lowest subsea datum of any producer in this area, but is not showing any water to date. The oil sand was logged from 3,672-77 feet, top of the sand having a datum elevation of minus 3,333 feet, bottom hole datum being 3,338 feet. It tested 11 bbls. in 30 minutes through a 1½-inch choke. If this well is not continued to be pinched in it will no doubt show up water within a short time, as it is on the extreme western edge, and is producing from below the water level.

Humble Oil & Refining Co.'s No. 1 Phillips in the S. Harrel Survey, southern Upshur County, was another extension of note this week when it topped the sand at 3,627-45 feet and was completed at the lower depth. It is now pinched to 100 bbls. per day and marks another northern extension to the Lathrop Pool, proving several hundred more acres to production in Upshur County.

Joe Burnham's No. 1 Beck in the Augustine Survey, approximately 3 miles northwest of Gladewater, Upshur County, is considered a western edge marker of the Gladewater and Lathrop areas as it core tested 30 fourbles of salt water in 18 minutes on a drill stem test. Later reports stated that it cored streaks of shale from 3,748-62 feet, and sand with a slight showing of oil from 3,762-63 feet. Shale and streaks of sand were cored from 3,763-75 feet. This has been one of the most interesting tests in the Gladewater area due to the possibilities of limiting the pool or providing another long extension.

The Texas & Pacific Railroad depot at Willow Springs, in the Lathrop Pool, Gregg County. Several loading racks, many supply company warehouses, and other business establishments are located near this point on the railroad, approximately 4 miles west of Longview, and it is one of the largest shipping and receiving centers in the East Texas district.

Pipe Line Plans

The Shell Pipe Line Co. has purchased the R. Smith 23-acre tract in the Foote Survey, Gregg County, between Kilgore and Longview for a main station site on the 10-inch line the company is commencing to build from Gregg County to Houston. Survey is completed and the company is buying right of way for this line, pipe has been ordered and construction will start within a short time.

The Magnolia Pipe Line Co. is building one station near the town of Brownsboro on its 12-inch line from Gregg County to Corsicana, and will equip this station with six motor-driven Worthington pumps. This will be Magnolia's second line out of the East Texas district, having completed its first one, a 10-inch line to Center station, several months ago, this line now being in operation.

Practically all major purchasers in the East Texas district have met Magnolia Petroleum Co.'s flat posting of 20 cents per barrel for crude from the district, with the exception of Humble Oil & Refining Co., The Texas Company and Sun Oil Co. The latter company posted a price of 28 cents per barrel, but as yet has no line into the district and does not constitute a major purchaser. Sinclair Oil & Gas Co. and Gulf Production Co. met the 20-cent posting. The Tidal Oil Refining Co., Arkansas Fuel Oil Co. and Simms Oil Co. are paying 15 cents per barrel.

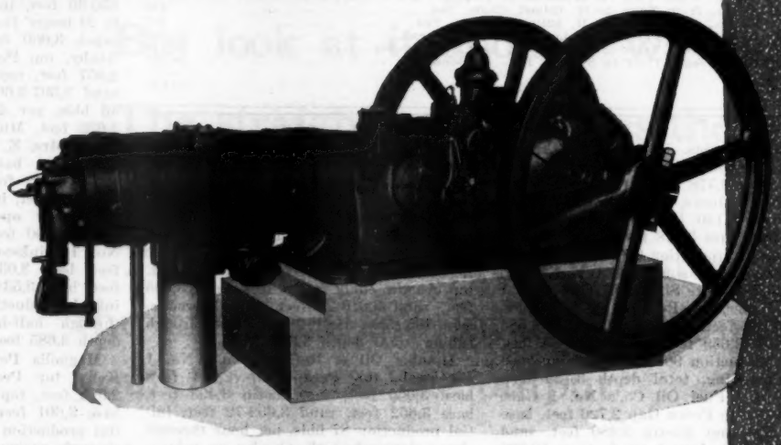
The average price being paid for oil out of the district now runs around 18 cents per barrel.

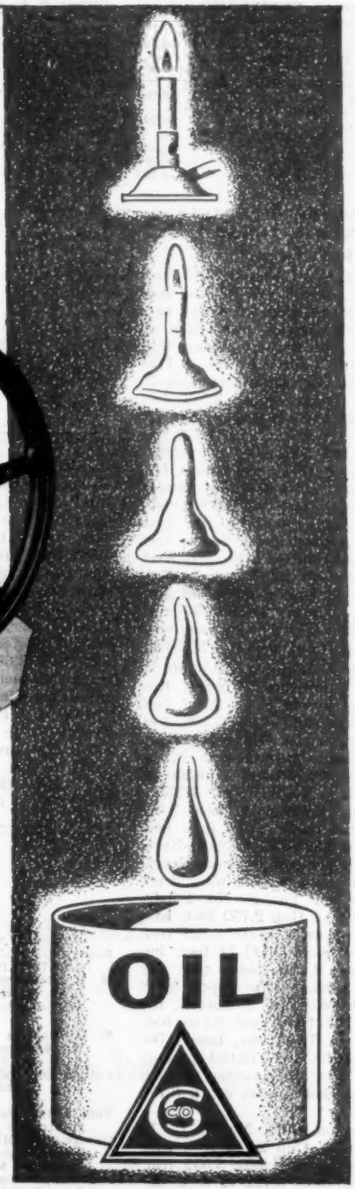
Crude Oil Deliveries

Shipments of East Texas oil for the week ending June 18 were 2,488,150 bbls., a daily average of 355,450 bbls. The shipments were distributed as follows: Through trunk pipe lines 1,574,924 bbls.; to local refineries 177,607 bbls., and by tank car to destinations in all directions, even to Canada, 735,619 bbls.

CONVERTIBLE TO OIL

THE FAIRBANKS-MORSE
CONTINENTAL GAS ENGINES
30-40-50-60 TWIN 75 H. P.
NOW CONVERTIBLE TO
FAIRBANKS-MORSE
SEMI-DIESEL OIL ENGINES





The entire line of Continental Gas Engines is now very readily converted to Fairbanks-Morse Semi-Diesel Oil Engines. This feature should not be overlooked by any operator—particularly in fields of low gas pressure, indicating that eventually sufficient gas for pumping will not be available . . . The simplicity of the gas engine is retained in the oil engine. The combustion system, so successfully used in the Horizontal Y Engine, has been improved. The injection system is composed of standard parts used in certain sizes of Fairbanks-Morse Marine Diesel Engines. Remarkably high horse power output and flexibility of operation, exceptionally clean burning of fuel, has been attained.

"If Continental Sells It....There Is No Better"

THE CONTINENTAL SUPPLY COMPANY

General Offices: ST. LOUIS
THE CONTINENTAL SUPPLY CO., LTD.
224 Traders Building, Calgary, Alberta, Canada
Export Offices: CONTINENTAL EMSCO CO., INC.
74 Trinity Pl., New York
London Offices: 316-17 Dashwood House, Old Broad St., E. C. 2
CONTINENTAL EMSCO S. A. R.
7, Strada Eminescu, Ploesti, Romania

COJ7-2-GRAY

CONTINENTAL

Following are the names of the shippers, the destination and volume of crude shipped:

TRUNK PIPE LINES

	Bbls.
Arkansas P. L., to Shreveport	217,175
Atlas P. L. Co., to Shreveport	177,249
Gulf P. L. Co., to Port Arthur	284,841
Humble P. L. Co., to Moore Station	156,429
Humble P. L. Co., to Jacksonville	153,357
Houston Oil Co., to Amigo	64,109
Magnolia P. L. Co., to Center, Tex.	149,908
Texas P. L. Co., to Port Arthur	319,025
Tidal P. L. Co., to Magnolia, Center Station	52,831
Total	1,574,924

TO LOCAL REFINERIES

Boone Ref., Boone Ref., Arp	1,400
Butler-Calhoun, Overton Ref., Overton	10,500
C. & P. P. L. Co., Beacon O. & R. Co., Henderson	14,875
East Texas Ref., East Texas Ref., Friars Switch	38,787
East Texas Ref., East Texas Ref., Longview	50,837
Tyler P. L. Co., Taylor Ref., Tyler, Tex.	61,208
Total	177,607

COMPLETIONS IN EAST CENTRAL TEXAS

Rusk County

H. L. Hunt's No. 2 Finney, top Pecan Gap 2,718 feet, base 3,065 feet, top Austin chalk 3,558 feet, base 3,685 feet, sand 3,685-3,725 feet, initial production 80 bbls. per hour open through tubing, total depth 3,725 feet. Calloway's No. 5 Harmon, top Pecan Gap 2,700 feet, base 3,144 feet, top Austin chalk 3,587 feet, to 3,728 feet, initial production 134 bbls. per hour from sand 3,728-62 feet, total depth 3,762 feet. Gulf Production Co.'s No. 3-A Keeling, top Pecan Gap 2,796 feet, base 3,193 feet, top Austin chalk 3,616 feet, sand 3,782-3,802 feet, initial production 100 bbls. per hour open through tubing, total depth 3,802 feet. Gulf Production Co.'s No. 2-B Keeling, top Pecan Gap 2,690 feet, base 3,122 feet, top Austin chalk 3,550 feet, base 3,698 feet, sand 3,698-3,733 feet, initial production 95 bbls. per hour open through tubing, total depth 3,733 feet.

Humble Oil & Refining Co.'s No. 2 Plowman, top Pecan Gap 2,758 feet, base 3,127 feet, top Austin chalk 3,511 feet, base 3,681 feet, sand 3,681-3,708 feet, initial production 74 bbls. per hour through eleven-sixteenths-inch tubing choke, total depth 3,708 feet. Humble Oil & Refining Co.'s No. 1 J. H. Wooley, top Pecan Gap 2,688 feet, base 3,063 feet, top Austin chalk 3,492 feet, base 3,586 feet, sand 3,665-85 feet, initial production 84 bbls. per hour through eleven-sixteenths-inch tubing choke, total depth 3,685 feet. Lee and Young's No. 1 John Wheelis, top Pecan Gap 2,759 feet, base 3,153 feet, top Austin chalk 3,528 feet, base 3,741 feet, sand 3,741-74 feet, initial production 3,200 bbls. per day through open tubing, total depth 3,776 feet. Pilot Oil Co.'s No. 2 Thrash, top Pecan Gap 2,704 feet, base 3,140 feet, top Austin chalk 3,563 feet, base 3,702 feet, sand 3,724-58 feet, initial production 279 bbls. first 26 minutes through 1½-inch casing choke, total depth 3,775 feet.

Gulf Production Co.'s No. 1 L. P. Thrash, top Pecan Gap 2,736 feet, base 3,110 feet, top Austin chalk 3,552 feet, base 3,722 feet, sand 3,722-42 feet, initial production 141 bbls. per hour open through tubing, total depth 3,742 feet. John Hoosier's No. 1 Eaton, top Pecan Gap 2,625 feet, top Austin chalk 3,571 feet, base 3,741 feet, sand 3,741-66 feet, initial production 440 bbls. per hour through 1½-inch casing choke, total depth 3,766 feet. Humble Oil & Refining Co.'s No. 4 Plowman, top Pecan Gap 2,710 feet, base 3,091 feet, top Austin chalk 3,536-82 feet, initial production 82 bbls. first hour through eleven-sixteenths-inch tubing choke, total depth 3,672 feet.

Lyon Oil & Refining Co.'s No. 1 W. P. Brett, top Pecan Gap 2,634 feet, base 3,092 feet, top Austin chalk 3,604 feet, base 3,717 feet, sand 3,717-38 feet, initial production 117 bbls. per hour open through tubing, total depth 3,775 feet. Miller and others' No. 1 Keeling, top Pecan Gap 2,678 feet, base 3,150 feet, top Austin chalk 3,567 feet, base 3,724 feet, top of sand 3,724 feet, initial production 328 bbls. in 19 hours through eleven-thirty-seconds-inch tubing choke, total depth 3,778 feet. Overton Refining Co.'s No. 1 Jones, top Pecan Gap 2,722 feet, base 3,140 feet, top Austin chalk 3,582 feet, base 3,748 feet, sand 3,748-81 feet, initial production 960 bbls. per hour open through casing and tubing, total depth 3,781 feet. Shaw Oil Co.'s No. 1 D. C. Joiner, top Pecan Gap 2,710 feet, base 3,109 feet, top Austin chalk 3,585 feet, base 3,659 feet, sand 3,727-35 feet, initial production 90 bbls. per hour open through tubing, total depth 3,735 feet.

Arkansas Fuel Oil Co.'s No. 1 Gabe Ferguson, top Pecan Gap 2,720 feet, base 3,030 feet, top Austin 3,480 feet, sand 3,642-55 feet, initial production 10,800 bbls. daily through casing and tubing, based on 15 minutes' gauge, total depth 3,671 feet. Blackwell Oil & Gas Co.'s No. 2 Moore, top Pecan Gap 2,675 feet, base 3,030 feet, top Austin 3,480 feet, base 3,558 feet, sand 3,608-30 feet, initial production 160 bbls. per hour open through tubing, total depth 3,673 feet. British-American's No. 3 Kangerga, top Pecan Gap 2,640 feet, base 3,050 feet, top Austin chalk 3,445 feet, base 3,535 feet, sand 3,616-27 feet, initial production 165 bbls. first 28 minutes through tubing, total depth 3,627 feet.

Humble Oil & Refining Co.'s No. 1 Blackwell, top Pecan Gap 2,694 feet, base 3,065 feet, top Austin 3,495 feet, base 3,652 feet, sand 3,652-72 feet, initial production 87 bbls. per hour through eleven-sixteenths-inch choke on tubing, total depth 3,672 feet. Lide Rowe's No. 2 Young, top Pecan Gap 2,680 feet, base 3,062 feet, top Austin chalk 3,498 feet, base 3,590 feet, sand 3,698 feet, initial production 62 bbls. per hour open through tubing, total depth 3,761 feet. Ray Drilling Co.'s No. 3 Wilson, top Pecan Gap 2,652 feet, base 3,001 feet, top Austin 3,463 feet, base 3,551 feet, sand 3,597-3,626 feet, initial production 213 bbls. first 30 minutes open through casing and tubing, total depth 3,626 feet.

Big Indian Oil Co.'s No. 2 Deason, top Pecan Gap 2,718 feet, base 3,135 feet, top Austin chalk 3,545 feet, base 3,621 feet, sand 3,675-92 feet, initial production 155 bbls. per hour through casing, total depth 3,731 feet. Humble Oil & Refining Co.'s No. 8 Kangerga, top Pecan Gap 2,728 feet, base 3,100 feet, top Austin chalk 3,515 feet, base 3,651 feet, sand 3,651-89 feet, initial production 67 bbls. per hour through eleven-sixteenths-inch choke on tubing, total depth 3,689 feet. Roy I. Carter's No. 3 Mayfield-Alford, top Pecan Gap 2,635 feet, base 3,030 feet, top Austin chalk 3,439 feet, base 3,544 feet, top of sand 3,605 feet, initial production 130 bbls. first 12 hours' swabbing through casing, total depth 3,680 feet. Tidal Oil Co.'s No. 3 Finney, location abandoned.

Anderson's No. 3 Frederick, top Pecan Gap 2,440 feet, base 2,952 feet, sand 3,630-60 feet, initial production 200 bbls. in 24 hours' flowing through tubing, total depth 3,660 feet. H. L. Hunt's No. 5 Ashby, top Pecan Gap 2,570 feet, base 2,957 feet, top Austin chalk 3,430 feet, sand 3,597-3,601 feet, initial production 45 bbls. per day on pump, total depth 3,632 feet. Mid-Kansas Oil & Gas Co.'s No. 1 Mrs. E. E. Moore, top Pecan gap 2,642 feet, base 3,055 feet, top Austin chalk 3,442 feet, base 3,637 feet, sand 3,645-71 feet, initial production 130 bbls. first hour open through tubing, total depth 3,690 feet. The Texas Company's No. 1 Pinkston, top Pecan gap 2,640 feet, base 3,030 feet, top Austin 3,450 feet, base 3,534 feet, sand 3,534-54 feet, initial production 130 bbls. first hour through half-inch tubing choke, total depth 3,685 feet.

Magnolia Petroleum Co.'s No. 1 Dan Kelly, top Pecan gap 2,597 feet, base 2,925 feet, top Austin chalk 3,420 feet, base 3,601 feet, sand 3,601-10 feet, initial production 85 bbls. first 15 minutes through casing and tubing, total depth 3,610 feet. Brown and Wilson's No. 1 M. R. Terrell, top sand 3,717 feet, initial production 10 bbls. per hour through crooked valve on tubing, total depth 3,729 feet. Humble Oil & Refining Co.'s No. 25 Crim, abandoned location. Humble Oil & Refining Co.'s No. 24 Crim, location abandoned. Ward Oil Corp.'s No. 1 Beall, top sand 3,675 feet, initial production 60 bbls. in 20 minutes through open tubing, total depth 3,679 feet.

East Texas Refining Co.'s No. 6 D. Wills, top sand 3,642 feet, initial production 840 bbls. in 12 hours through open tubing, total depth 3,650 feet. Shell Petroleum Corp.'s No. 3 Wills, top sand 3,603 feet, initial production 66 bbls. per hour through three-fourths-inch tubing choke, total depth 3,606 feet. Snowden & McSweeney's No. 4 Laird, top sand 3,576 feet, initial production 100 bbls. per hour through three-fourths-inch tubing choke, total depth 3,588 feet. Stroube & Black's No. 1 W. M. Jernigan, top sand 3,690 feet, initial production 20 bbls. per hour through one-fourth-inch tubing choke, total depth 3,725 feet. Tidal Oil Co.'s No. 2 J. S. Bean, top sand 3,602 feet, initial production estimated 4,000 bbls. per day open, total depth 3,654 feet. Humble Oil & Refining Co.'s No. 9-A S. S. Laird, top sand 3,660 feet, initial production 90 bbls. per hour through eleven-sixteenths-inch tubing choke, total depth 3,708 feet.

Stanolind Oil & Gas Co.'s No. 6 Ben Laird, top sand 3,650 feet, initial production 171 bbls. per hour through open tubing, total depth 3,731 feet. Humble Oil & Refining Co.'s No. 11-A S. S. Laird, top sand 3,624 feet, base 3,697 feet, initial production 64 bbls. per hour through eleven-sixteenths-inch tubing choke, total depth 3,699 feet. Humble Oil & Refining Co.'s No. 10 J. N. Peterson, top sand 3,608 feet, initial produc-

(Continued on Page 116)

TANK CAR SHIPMENTS

Arkansas Fuel Oil Co., from Longview to Louisiana O. & R., Shreveport	13,141
British-American, from Overton to British-American, Toronto	4,046
Burton Drilling Co., from Reeds Switch to British-American, Toronto	none
Butler & Calhoun, from Overton to Witherspoon, San Antonio	11,340
Central P. L. Co., from Overton to Atlantic O. P. Co., Atreco	5,250
Central P. L. Co., from Overton to British-American, Toronto	1,260
Cranfill-Reynolds, from Longview to Continental, Texas City	34,620
Crown Pipe L., from Friars Switch to Crown Central, Houston	9,747
Crown Pipe L., from Friars Switch to Atlantic O. P., Atreco	2,400
Crown Pipe L., from Friars Switch to Primrose Ref., Dallas	1,000
East Texas Ref., from Longview to Republic O. & R., Texas City	2,250
East Texas Ref., from Longview to Oriental Ref., Dallas	7,875
F. & M. Transporting Co., from Camp Switch to Atlantic, Atreco	34,350
Nat Hunter Oil Co., from Friars Switch to Nat Hunter, Texas City	49,700
Houston Oil Co., from Kilgore to Lubrite Ref., East St. Louis	13,400
Houston Oil Co., from Kilgore to Whitestar Ref., Wood River, Ill.	3,584
Humble O. & R., from Kilgore to Lubrite Ref., East St. Louis	6,260
Humble O. & R., from Kilgore to Whitestar Ref., Wood River, Ill.	34,422
Illinois P. L. Co., from Arp to Marathon Oil, Fort Worth	4,749
Illinois P. L. Co., from Camp Switch to Marathon Oil, Fort Worth	8,861
Inland Waterways, from Friars Switch to Stone Oil Co., Texas City	9,525
Marion Oil Co., from Kilgore to Stone Oil Co., Texas City	none
Macmillan Pet., from Camp Switch to H. H. Cross, Joliet, Ill.	2,071
Macmillan Pet., from Camp Switch to British-American, Toronto	5,525
Oriental Oil Co., from Kilgore to Oriental Ref., Dallas	2,800
Panola P. L. Co., from Friars Switch to Oriental Ref., Dallas	none
Petroleum Marketing, from Friars Switch to Oriental Ref., Dallas	none
Petroleum Marketing, from Kilgore to Warner-Quinlan, Houston	19,796
Pilot Oil Co., from Norfolk to Cooper Pet., Texas City	2,750
Pilot Oil Co., from Willow Springs to Chalmette Ref., Chalmette La.	18,900
Republic Prod. Co., from Reeds Switch to Republic Prod., Houston	none
Sabine P. L. Co., from Reeds Switch to British-American, Texas City	11,200
Shell P. L. Co., from Kilgore to Shell Pet., Houston	132,599
Simms Oil Co., from Willow Springs to Simms Ref., Dallas	33,103
Simms Oil Co., from Willow Springs to Stanolind O. & G. Co., Galveston	4,266
Sinclair Texas, from Friars Switch to Sinclair Ref., Houston	24,880
Sinclair Texas, from Friars Switch to Sinclair Ref., Texas City	24,010
Sinclair Texas, from Kilgore to Sinclair, Houston	76,904
Sinclair Texas, from Kilgore to Sinclair, Texas City	23,758
Stanolind O. & G. Co., from Kilgore to Stanolind, Galveston	13,767
Stanolind O. & G. Co., from Kilgore to Standard Oil Co. of Indiana, Whiting	240
Texas Pacific C. & O. Co., from Camp Switch to T. & P., Fort Worth	2,792
Tyler P. L. Co., from Tyler to Atlantic O. P. Co., Atreco	23,855
Tyler P. L. Co., from Tyler to H. Elliott, Crow, Tex.	620
Tyler P. L. Co., from Tyler to H. Elliott, Naples, Tex.	189
Tyler P. L. Co., from Tyler to Golden Murchison, Athens	380
Tyler P. L. Co., from Tyler to Republic O. & R., Texas City	15,944
Tyler P. L. Co., from Tyler to Sinclair Ref., Houston	30,482
Total	735,619

EAST CENTRAL TEXAS WILDCATS

Week Ending June 29

ANDERSON COUNTY

Company, well, farm name, section and block—	Remarks:
Riango Oil Co.'s No. 1 J. Lynn, 1,400 ft. from NE line and 7,425 ft. from E line of survey, R. Brown Sur.	Shut down 1,200 ft.
H. B. McConnell et al's No. 1 N. B. Watson, 500 ft. from W line and 4,850 ft. from N of S line of survey in S half of 139-ac. tract, M. Main Sur.	Derrick.

ANGELINA COUNTY

R. O. Moore's No. 1 Abney Estate, 50 ft. N of Blk. No. 6, immediately out of city limits of Lufkin	T. D. 1,350 ft.; set 6⅝-in. csg.; bailed dry.
Pollick Oil Co.'s No. 1 Sessions, 1,250 ft. from N and 1,350 ft. from E line of Jesus De La Garza Sur.	Shut down 3,600 ft.

BOWIE COUNTY

Tom Bell's No. 1 Merritt, 1,225 ft. from N and 875 ft. from E line of survey, T. S. McKinney Sur.	Shut down 2,885 ft.
Devore and Midfield's No. 1 Roy B. Cooper, 250 ft. from N and 250 ft. from E line of Cooper 115-ac. tract, W. M. Ward Sur.	Shut down 2,520 ft.
Parkering-Jones et al's No. 1 W. W. Whybark, 200 ft. from S and W of SW cor. of J. A. Dyer Sur.	Derrick.
Lee Timberlake et al's No. 2 Julius N. Tidwell, 655 ft. from E and 2,610 ft. from S of survey in L. M. Rice Sur.	Salt water on drill stem test; shut down 3,000 ft.

CAMP COUNTY

W. E. Duke et al's No. 1 L. B. McCaslen, 2 miles NW of Lafayette, Mary Hays Sur.	Drlg. 2,536 ft.
Monitor Oil Co.'s No. 1 E. A. King, 150 ft. E of railroad and 150 ft. N of S line of E. A. King 315-ac. tract, E. A. Peek Sur.	Drlg. 2,527 ft.

CHEROKEE COUNTY

Ben Banner's No. 1 J. Williams Estate, 150 ft. S and 300 ft. W of SE cor. of the N. Hogg heirs and in the J. L. Hogg heirs Sur.	Drlg. 4,025 ft.
Denman et al's No. 1 Mrs. Renfroe, 330 ft. N of S line and 330 ft. E of W line of farm, Uriah Moore Sur.	Shut down.
Grey et al's No. 1 McGee, 1,600 ft. from W and 300 ft. S of NE cor. of McKnight Sur.	Coring 4,037 ft.
Helen-Clare Oil Co.'s No. 1 Mrs. M. P. Perkins, 1,800 ft. from N and 450 ft. from W of survey, Thomas Stafford Sur.	Rig up.
William A. Stone's No. 1 Blount Decker, 900 ft. E of E line of S. Selman Sur. and 1,200 ft. S of N line of E. M. Decker 406-ac. tract in George Ruddle Sur.	Coring 5,325 ft.
Walton Oil Co.'s No. 1 E. Singletary, 250 ft. W and 150 ft. N of NE cor. of M. Lacey Sur. and in Walters Sur. on Singletary 84-ac. tract	T. D. 2,960 ft.; shut down.

(Continued on Page 98)

Certainly you can improve straight-run gasoline if you add plenty of cracked gasoline to it

But look at it another way

The straight-run degrades the cracked gasoline

The more straight-run you mix with the cracked the lower the quality of your total gasoline output

And quality is what counts today—anti-knock quality

Dubbs crack as much as you can—skim as little crude as you can

That gives you the most and the best out of your charging stock

Universal Oil Products Co
Chicago, Illinois U S A

Dubbs Cracking Process
Owner and Licensor

Wildcat Showings Feature West Texas

Tests in Schleicher, Howard and Gaines Counties Show Good Signs of Oil Production. Big Lake's New Pipe Line Outlet

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., June 29.—Negotiations for the sale of an interest in Wessner and others' No. 1 Nicks, Schleicher County, are still pending, and as soon as the contract is closed the test will probably be deepened from its present total depth of 4,006 feet where it has been standing for about a month, swabbing and partially filling with oil during the interim. The last swabbing, June 26, brought out 1,200 feet of fluid, one-third of which was oil and the other two-thirds water. About 800 feet of fluid rose in the hole in the next 36 hours.

A packer was set 30 feet off bottom when a string of casing was set, and this packer has failed to hold, letting in the water which is being swabbed from the hole. This packer will not be cemented until a further test is made of the hole, then if sufficient showings of increases in oil are made, it will be cemented to shut off the water.

This test is in Section 77, Block LL, T. C. Railway Survey, north of the town of Eldorado, and has the best oil showing yet encountered in the county, and even if this pay horizon, a new one in the county, does not prove productive, the test still has a chance of producing from deeper strata from which showings were made in the Phillips Petroleum Co.'s No. 1 Whitten. Showings in the Whitten test were logged at 4,912-25 feet and at 6,300-33 feet. However, the test proved a dry hole.

The Nicks test is estimated good for about 15 bbls. per day standing in its present condition with packer leaking, and brown sandy lime only penetrated 6 feet.

Continental Oil Co.'s No. 1 Brindley, semiwildcat located in Section 18, Block 38, Township 1s, T.&P. Railway Survey, Howard County, has been completed for an initial production of 50 bbls. per day at a total depth of 3,200 feet. It was previously shot with 90 quarts from 3,149-85 feet after plugging back from a total depth of 3,520 feet to 3,200 feet. This is the second well for this area, the company having completed its No. 1 Harding 7 miles southwest of Big Spring three years ago for an initial production of 140 bbls. per day. It has only been pumping around 15 bbls. per day.

Gas in Gaines County

Landreth Production Co.'s No. 1 Alley in Section 2, Block A-30, Public School Lands, southwestern Gaines County, encountered an estimated 100,000 feet of gas June 27 at a total depth of 4,306 feet and is now standing shut down for orders at 4,312 feet. Seven-inch casing will be run at this depth and drilling resumed. It previously had a showing of oil at 2,966-70 feet, a slight showing of gas at 2,983-89 feet, and another showing of gas at 3,030-35 feet, encountering another slight showing of oil at 3,040 feet.

It is reported running higher than other tests made in that area, and due to the fact that it lies between the Ogden Pool in Andrews County and the Hobbs Pool of New Mexico, located on a high, it is considered as having exceptionally good chances of picking up the Hobbs pay horizon, or the pay found in the Ogden wells, and open up the first pool for Gaines County. It is approximately 7 miles southeast of the Hobbs Pool. Elevation is 4,358 feet, and top of the gray lime was logged at 4,070 feet. Humble Oil & Refining Co.'s No. 1 Carswell and Louisiana Oil & Refining Co.'s No. 1 Ralph were two other tests drilled in this area, and the Alley test ran much higher on the lime than did those two tests which were previously abandoned.

Texas P. L. Runs Big Lake Oil

The Big Lake Oil Co. has closed a contract with the Texas Pipe Line Co., in which the latter company will handle a minimum of 5,000 bbls. of crude oil per day and a maximum of 25,080 bbls. per day from the former's leases in the Big Lake Field, Reagan County, at a rate of 32½ cents per barrel, thereby effecting a saving of 20 cents per barrel to the Big Lake Oil Co.

The Texas Pipe Line Co. is not to purchase the oil, but is merely to run it to the Republic Oil Refining Co.'s plant at Houston, in which the Big Lake Oil Co. has an interest, and to which the latter has been shipping around 5,000 bbls. per day for the past three months, in tank cars. Tank car rates to Houston from the Big Lake Field are 53 cents per barrel, or over 20 cents per barrel more than the pipe line rate will be on the new contract.

The Texas Pipe Line Co. will probably lay a gravity line from the Big Lake Field to its main line pump station at Iraan in Pecos County or still farther south to its station near Sonora, as there is a considerable drop in elevation between the field and those two stations, and a gravity line will no doubt suffice. However, a booster station may be constructed along the lateral or in the Big Lake Field to boost the oil.

Oil in this contract will come from the deep wells. The Reagan County Purchasing Co. is taking the production from the 3,000-foot pay horizons. Price for the crude is the average of the posted price in the Mid-Continent fields on oil not exceeding 40 gravity. The present price is 31½ cents per barrel. The higher volume of oil going to the refinery will make the new deal a profitable one for the Big Lake Oil Co., especially as the gravity of the crude is exceptionally high, and the company has an interest in the refinery to which it will be shipped.

COMPLETIONS IN WEST TEXAS

Crane County

Cranfill Brothers and Gulf Production Co.'s No. 1 Tubbs, top lime 3,636 feet, top pay 4,295 feet, increase gas at 4,595 feet and oil at 4,606 feet, shot 100 quarts 4,319-4,279 feet, initial production 107 bbls. per day, total depth 5,336 feet.

Howard County

Continental Oil Co.'s No. 1 Brindley, top pay 3,155 feet, increase 3,174-77 feet, initial production 50 bbls., shot 90 quarts 3,149-85 feet, total depth 3,590 feet.

Jones County

Jake Crost and others' No. 1 Swan, top pay 2,529 feet, initial production 100 bbls., total depth 3,590 feet. Moutray Oil Co.'s No. 2 Hart, top pay 1,969 feet, initial production 65 bbls., total depth 1,977 feet. Young and McNeill and others' No. 1 Cade, dry and abandoned, total depth 1,922 feet.

Loving County

The California Oil Co.'s No. 4 Allen, top pay 4,323 feet, shot 160 quarts 4,304-50 feet, initial production 200 bbls., total depth 4,353 feet. Texas Pacific Coal & Oil Co.'s No. 1 James (recompleted), old total depth 2,354 feet, new total depth 2,450 feet, new initial production 120 bbls. per day.

WEST TEXAS PRODUCTION
Week Ended June 27

County—	No. wells	Prod.
Andrews	3	0
Crane	377	15,782
Crockett	51	1,361
Ector	78	5,834
Fisher	11	581
Garza	2	15
Howard-Glasscock	542	28,875
Irion	9	64
Jones	84	1,258
Loving	41	3,592
Mitchell	111	1,702
Pecos	647	73,934
Reagan	255	29,666
Runnels	5	32
Scurry	5	6
Upton	261	5,114
Taylor	3	100
Ward	62	3,006
Winkler	595	42,728
Total production this week		213,696
Total production last week		215,113
Decrease		1,417

SHIPMENTS THROUGH TRUNK LINES

Company, size, location—	Bbls.
Atlantic, 10-inch, Houston	None
Gulf, 10-inch, Ranger	24,207
Humble, 2-8-inch, San Angelo	20,364
Humble, 10-12-inch, Conyn	50,672
Illinois, 3-8-inch, Del Rio	26,606
Magnolia, 8-inch, De Leon	15,288
Pasotex, 8-inch, El Paso	11,480
Shell, 10-inch, Healdton	15,710
Shell, 10-inch, Houston	32,011
Texas, 12-inch, Houston	15,815
Total	212,253

SHIPMENTS THROUGH TANK CARS

Shell Pet. Corp. from McCamey	400
Big Lake from Texon	3,000
Southern Crude Oil Pur. Co. from Wickett	9,364
Total	12,764
Total daily average production	253,829
Total daily average distribution	248,537
Daily average from storage	5,292

SHIPMENTS TO REFINERIES

Big Spring Refg. Co., Big Spring	837
Burford Refg. Co., Pecos	3,970

(Continued on Page 117)

WILDCAT OPERATIONS IN WEST TEXAS

Week Ended June 29

ANDREWS COUNTY

Company, well, farm name, section and block— Remarks

Deep Rock Oil Co. et al's No. 1 Kuykendall, 2,310 ft. from N and E of SW cor. Sec. 24, School Blk. A-46. Shut down; total depth 4,648 ft.; plugged back to 4,565 ft.

BREWSTER COUNTY

Brewster Oil Co.'s No. 1 fee, 2,640 ft. S and 2,598 ft. E of NW cor. Sec. 45, Blk. G-15, G.C.&S.F. Sur. Shut down 1,935 ft.

E. L. Chapman's No. 1 Skinner, C SW SE Sec. 100, Blk. 3, G.C.&S.F. Sur. Shut down 1,302 ft.

Trans-Pecos Oil & Gas Co.'s No. 1 Jones, 930 ft. from N and 2,500 ft. from E of Sec. 18, Blk. G-15, G.C.& S. F. Sur. Shut down 2,816 ft.

Van McPhail's No. 1 McIntyre, SE cor. Sec. 59, Blk. 302, 7 miles south of Alpine Shut down 1,750 ft.

CONCHO COUNTY

Beesley et al's No. 1 Waring Estate, 400 ft. from N and E Sec. 163, T.&N.O. Sur. Shut down 267 ft.

Betts & Dennis' No. 1 H. E. Woods, 710 ft. from E and 150 ft. from S Sec. 3, H.E.&W.T. Sur. Shut down 80 ft.

Turner et al's No. 1 Borsig, 150 ft. from S of NE cor. G. Emmig Sur. 136, 6 miles W of Paint Rock Shut down 1,850 ft.

CRANE COUNTY

E. H. Sides et al's No. 1 B. P. Nolen, 150 ft. from S and 150 ft. from W of N 160 acres, Sec. 5, Blk. 31, H.&T.C. Sur. Shut down 1,920 ft.

CROCKETT COUNTY

Doleman & Moore's No. 1 Perner, 3,135 ft. from N and 1,485 ft. from E of Sec. 36, Blk. 2, I.&G.N. Sur. Spudded and shut down.

CULBERSON COUNTY

Kornrumpf et al's No. 1 Garren, 330 ft. S and W Sec. 15, Blk. 79, Public School Land Shut down 1,230 ft.

DAWSON COUNTY

Albaugh et al's No. 1 Robinson, C NW Sec. 46, Blk. M, E.L.&R.R. Sur. Spudded 20 ft. and shut down.

ECTOR COUNTY

H. F. Wurts' No. 1 E. A. Ibbetson et al, 330 ft. from N and E lines of NW Sec. 16, Blk. 46, Twp. 3s, G.M. M.Br.&A. Sur. Shut down 3,275 ft.

(Continued on Page 97)

WILDCAT OPERATIONS IN TEXAS PANHANDLE

Week Ending June 29

CARSON COUNTY

Company, well, farm name, section and block— Remarks:

Deep Lake Oil Co.'s No. 1 Keys, NE cor. SW, Sec. 1, Blk. 4, I.&G.N. Sur. S.G. 2,220 ft; 12,000,000 ft. gas; T. D. 2,675 ft; U.R. 6-in. csg.

El Paso-Amarillo O. & G. Co.'s No. 1 Chapman, 594 ft. S. 1,458 ft. E. Sec. 7, Blk. 3, A.B.&M. Sur. Rig.

Interstate Prod. Co.'s No. 1 Seiber, C NW, Sec. 10, Blk. 7, H.&G.N. Sur. Drlg. 2,105 ft.

Red River Gas Co.'s No. 1-A Bennett, 660 ft. N, 660 ft. W, NW, Sec. 2, B.&B. Sur. Drlg. 2,693 ft; 10,000,000 ft. gas 2,585 ft.

The Texas Co.'s No. 1 Crutchfield, 1,320 ft. S, 1,331 ft. E. Sec. 29, Blk. 4, I.&G.N. Sur. Material.

CHILDRESS COUNTY

C. L. Sloan et al's No. 1 B. P. Smith, Sec. 49, F. P. Knott lands T.D. 5,000 ft.

COLLINGSWORTH COUNTY

Dixon et al's No. 1 Bell, 330 ft. N, 1,320 ft. W, Sec. 102, Blk. 21, H.&G.N. Sur. Top pay 2,498 ft; 300 ft. oil in hole; running 5-in. csg.

COTTLE COUNTY

Darby Oil Co. and Merry Bros. & Perrin's No. 1 Richards, 330 ft. NE, Sec. 13, B.S.&F. Sur. Drlg. 4,754 ft.

GRAY COUNTY

Anderson et al's No. 2 Vollmert, 330 ft. N and W, SW, Sec. 140, Blk. 3, I.&G.N. Sur. Rig.

Boyles et al's No. 1 Colebank-Morse, 330 ft. NE, Sec. 65, Blk. 25, H.&G.N. Sur. Spudded and S.D.

Brown et al's No. 1 Duncan, 330 ft. S and E, NW, Sec. 93, Blk. 3, I.&G.N. Sur. S.D. 980 ft; trying to pull 8-in. csg.

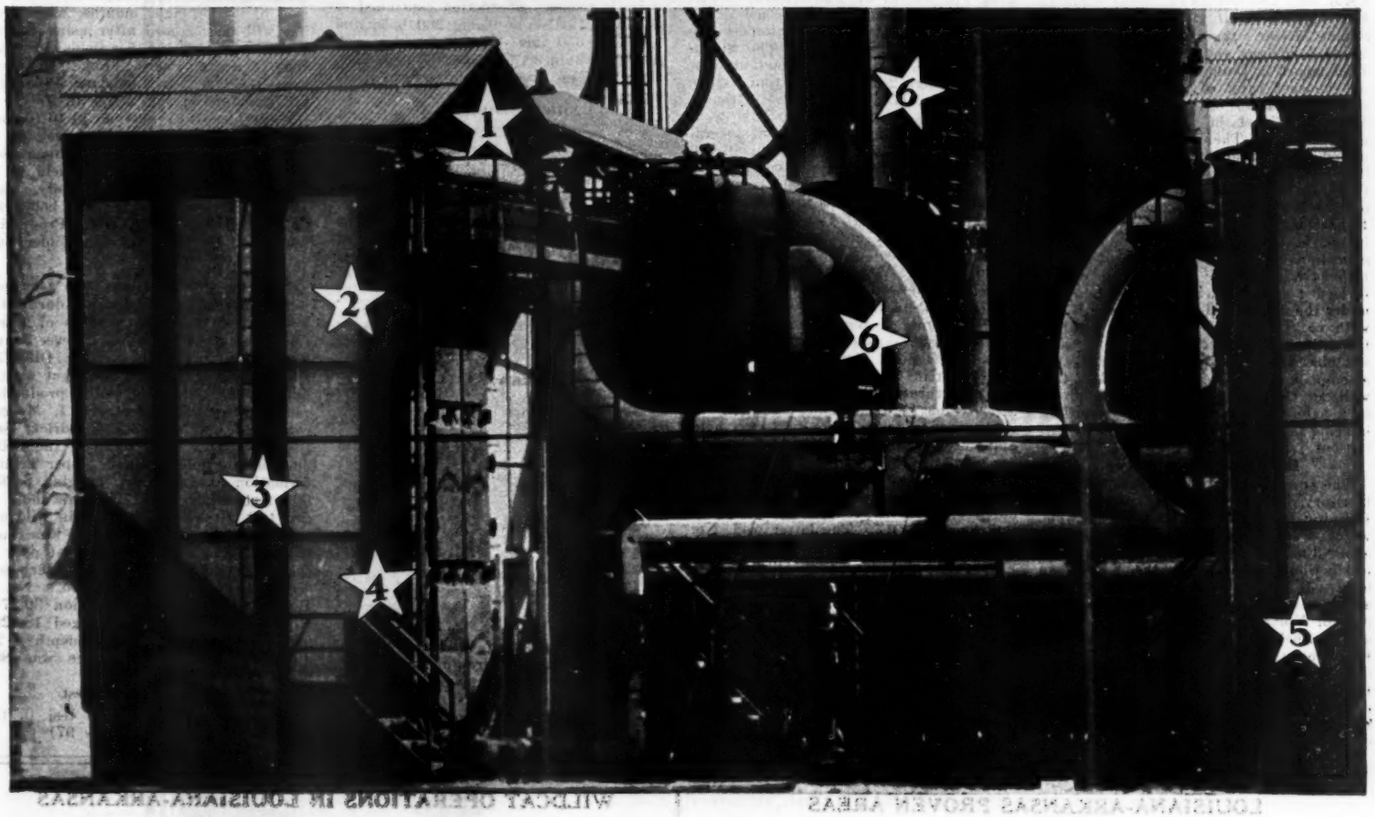
Cree Hoover & Traham's No. 1 Delmar, 330 ft. S line, 330 ft. W line, NW, Sec. 105, Blk. 3, I.&G.N. Sur. T.D. 3,264 ft; T.P. 3,225-55 ft; C. O. after 45-qt. shot; estimated 6 bbls. daily.

Danciger O. & R. Co.'s No. 1 Barrett, NW cor. S½ NE, Sec. 128, Blk. 3, I.&G.N. Sur. T.D. 3,365 ft; plugged back 3,325 ft; top pay 3,175 ft; swbd. 60 bbls.; to shoot.

Danciger O. & R. Co.'s No. 1-B Barrett, SW cor. N½ NE, Sec. 128, Blk. 3, I.&G.N. Sur. T.D. 3,280 ft; top pay 3,221 ft; swbng. 7 bbls. per hr.

(Continued on Page 116)

Count the places in this One Unit alone



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Wild Gasser in New Shelby County Area

Sabine Uplift Well on Louisiana-Texas Boundary Estimated Twenty to Thirty Million Feet. New Field in Bossier Parish

By J. R. Crumpton
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., June 29.—The most interesting development in this division during the week is E. L. Chapman's No. 1 Pickering Lumber Co., C. E. Henry Survey, which blew in unexpectedly Thursday, a wild gasser, from a depth of 3,886 feet. The well is in Shelby County, East Texas, about 2 miles east of the Sabine River, the boundary line between Louisiana and Texas at this point. Logansport in DeSoto Parish, Louisiana, on the east bank of the Sabine, is the nearest town to the east and Joaquin, 1½ miles west is the nearest Texas municipality. The production is estimated to be from 20,000,000 to 30,000,000 feet of dry gas daily, and coming from an open hole with the exception of 400 feet of 12½-inch surface casing. Indications are that the surface casing is not in the best of shape, as drilling operations a few weeks ago revealed that returns were coming from outside which formed a crater several feet in diameter under the derrick. This cavity was filled with rocks and cement and is probably the principal reason why a crater has not already formed around the hole. No attempt has yet been made to kill the well as the boilers are being removed to a safe distance and every precaution is being taken to prevent fire from breaking out.

In Unproven Territory

The new gasser is in hitherto unproven territory, but several years ago the Gulf Refining Co. completed a small oil well which was pumped for a long period, about 3 miles south of the Chapman test, production coming from the 2,400-foot level. It is located on what is known as the Sabine Uplift which covers a great part of North Louisiana and practically all of Shelby and Panola Counties in East Texas. The nearest gas field is to the north in Panola County, the Bethany Field, near the Louisiana line, which is producing from several horizons. The Zwolle and Blue Lake chalk rock fields in Sabine Parish, Louisiana, which produce from the 2,300 to 2,600-foot levels, are about 25 miles southeast of the new gas area.

There is an intensive drilling campaign in widely scattered parts of Shelby County, 11 active drilling riggs and five rigging up, several of which have encouraging shows recently, and the new development is expected to lend impetus to operations in that vicinity. The Sloan-Tokio Oil Co. is swabbing a small amount of oil through 2-inch tubing from its No. 1 Windham, H. English Survey, from a total depth of 3,399 feet. This well, which made several heads of oil several weeks ago, is located at Shelbyville, 6 miles southeast of Center. Another test being watched closely in this county is Bradley & Kadane's No. 1 Ashberry, G. W. Mitchell Survey, 7 miles southwest of the Chapman gasser and which is drilling in broken chalk, showing oil, at 3,000 feet.

New Bossier Field

Consistent with the performance of Shelby County, a Bossier Parish wildcat in northwest Louisiana seems destined to open a new field. Andrews and Devlin's No. 1 Nattin, Section 15-22-14, cored 11 feet of saturated sand from 2,871-82 feet after which 4½-inch casing was set with packer for a test. This failed to hold and the operators are cementing the casing at 2,868 feet and will test within the next week. The well is 6 miles west of Plain Dealing and 8 miles west and north of a freak producer completed in that area in 1917. The latter well, No. 1 Scovall & Gaines, Section 22-22-13, was drilled by the Dallas Oil Co. and flowed at the rate of 1,500 bbls. daily for several days from a total depth of 2,824 feet. The well ceased flowing, was never revived, and no offset was ever completed as a producer.

The Andrews & Devlin well has been operated recently by the Plain Dealing Oil Corp., composed of Dr. W. N. Hankins and others, but is being finished by W. E. Hall and Elmer Walker, pioneer operators of the Carterville Field, for an acreage interest. Followers of the wildcat are confidently expecting a new field to be developed in the prolific parish of Bossier.

Daily Average Production

Daily average production continued to decrease, Louisiana losing 260 bbls. and Arkansas 650 bbls. daily during the week for a combined decrease of 910 bbls. Daily average runs for the several pools were:

NORTH LOUISIANA

Caddo, light	7,060
Caddo, heavy	2,745
Homer	3,100
Haynesville	5,510
De Soto and Red River	2,555
Elm Grove	460
Bellevue	270
Cotton Valley	920
Urania	4,045
Pleasant Hill	390
Sarepta-Carterville	1,010
Zwolle	7,165
Holly	460
Total North Louisiana	35,690
Total previous week	35,950
Decrease	260

ARKANSAS

El Dorado	3,470
Smackover, light	3,900
Smackover, heavy	30,060
Stephens	740
Nevada	1,220
Lisbon	700
Champagnolle	2,710
Urbana	1,420
Total Arkansas	44,220
Total previous week	44,870
Decrease	650
Total both States	79,910
Total previous week	80,820
Decrease	910

Disappointing Wildcats

To offset the encouraging operations, there were several disappointing wildcat operations. The Pelican Natural Gas Co. abandoned its No. 1 Cooper, Section 29-18-14, Caddo Parish, at 3,648 feet. The well, 6 miles west of the city of Shreveport, on Cross Lake, had created more than ordinary interest as a potential deep test to the Trinity formation as no well had been drilled to this depth in that immediate vicinity. It is understood the abandonment is only temporary, for a period of six or eight months, when drilling will be resumed after using the rig to drill contracts in other fields. In southern Bienville Parish, Lake Bisteneau area, the Arkansas-Louisiana Pipe Line Co. encountered salt water in its No. 1 Gayoso Co., Inc., Section 14-16-10, and abandoned the well at 2,613 feet. A. F. Tarver abandoned his No. 1 Cutrer, Section 12-7-11, in the Zwolle Field at 2,550 feet, and Harrison County, East Texas, registered another dry hole with the completion of Everett Production Co.'s No. 1 Sypert, E. M. Wilder Survey, at 4,007 feet.

Only one producer and two gas wells were reported in this division during the week, all in the proven areas of North Louisiana. Tri Corp.'s No. 1 Levee Board, Section 17-20-15, in the old Oil City Field in Caddo Parish, was put on the pump making 25 bbls. daily, production coming from 2,265 feet. H. I. Morgan completed his No. 13-A Kendrick, Section 22-9-11, 2 miles south of the Bellevue shallow field, from the upper Trinity formation at 1,775 feet, gauging 6,435,000 feet of dry gas. The first hole of this test, 50 feet south, blew in wild unexpectedly from 1,737 feet and was finally subdued by cementing a great part of the drill stem in the hole. The other gasser was Southern Carbon Co.'s No. 3 Rosengrant & Ducomb, Section 30-17-6, Richland Parish, which gauged 18,129,000 feet of gas from a total depth of 2,459 feet. The rock pressure was 805 pounds.

Smackover Deep Test

The Lion Oil Co.'s deep test in the

(Continued on Page 97)

LOUISIANA-ARKANSAS PROVEN AREAS

NORTH LOUISIANA

BOSSIER PARISH

Company, farm and location— Remarks:

H. I. Morgan's No. 13-A Kendrick, 669 ft. E, 330 ft. S. NW cor. SE SE, Sec. 22-19-11 ..... Completed June 22; 6,435,000 ft. gas 1,775 ft.

CADDO PARISH—OIL CITY

Trio Corp.'s No. 1 Levee Board, 213 ft. S, 500 ft. E, NW cor., Sec. 17-20-15 ..... Completed June 18; 25 bbls. 2,265 ft.

CADDO PARISH—PINE ISLAND

J. T. McCormick's No. 1 C. B. Christian, 330 ft. S, 300 ft. W, NE cor. SW, Sec. 27-21-15 ..... S.D. 1,335 ft.

Shreveport Oil Corp.'s No. 2-B Muslow, 1,000 ft. S, 300 ft. E, NW cor., Sec. 32-21-15 ..... Arranging to set perforated csg. 2,135 ft.

Simplex Oil Co.'s No. 1 Youree-Glassell, 500 ft. N and E, C, Sec. 13-20-15 ..... Set 10-in. 150 ft; S.D.

MOREHOUSE PARISH

Bahan & Bahan's No. 4 Feasel, 900 ft. W, 300 ft. S, NE cor., Sec. 2-20-4 ..... Location.

OUACHITA PARISH

Ark.-La. P. L. Co.'s No. 6 McInnery, 700 ft. N and E, SW cor. SW NW, Sec. 28-19-4e ..... Arranging to test 2,185 ft.

RICHLAND PARISH

Pelican Nat. Gas Co.'s No. 2 Chapman, 660 ft. N and W, SE cor. SW, Sec. 14-16-6e ..... Set 6-in. 2,304 ft.

Pelican Nat. Gas Co.'s No. 1 R. H. Alexander, 660 ft. N and W, SE cor., Sec. 4-16-6 ..... Location.

State Line O. & G. Co.'s No. 1-A Holdiness, 1,063 ft. E, 760 ft. N, SW cor., Sec. 10-16-6e ..... Set 6-in. 2,300 ft.

Southern Carbon Co.'s No. 4 Rosengraut & Ducomb, 1,320 ft. S, 660 ft. W, NE cor., Sec. 19-17-6 ..... Rigging up.

United Carbon Co.'s No. 2 Cooper, 660 ft. N, 3,551 ft. E, SW cor., Sec. 13-16-4 ..... Set 6-in. 2,285 ft.

United Carbon Co.'s No. 1 Faust Lbr. Co., 1,320 ft. S, 1,980 ft. E, NW cor. SW, Sec. 13-17-5 ..... Location.

SABINE PARISH—ZWOLLE

Roy Baker's No. 1 Sabine Lbr. Co., Sec. 1-7-12 ..... Drlg. 2,000 ft.

W. M. Coates' No. 1 Hale, NE cor. SW NE, Sec. 1-7-11 .. Rigging up.

W. M. Coates' No. 1 Williams, NE cor., Sec. 23-7-11 .... S.D. 2,710 ft.

W. M. Coates' No. 1 McNeely, NW cor. NE NW, Sec. 14-7-11 ..... Dry and abd. 2,630 ft.

Hawkins et al's No. 1 Moran, Sec. 1-7-11 ..... 400 ft. oil in hole 2,620 ft; W.O. S.R.

O. A. Gautier et al's No. 1 Mischell, 330 ft. E, 150 ft. N, SW cor. SE NW, Sec. 30-8-13 ..... S.D. 2,360 ft.

Hawkins & Antoon's No. 1 Newton, Sec. 1-7-11 ..... Resetting liner to test 2,502 ft.

Jordan Drlg. Co.'s No. 1 McCormick, Sec. 3-7-11 ..... Set 6⅝-in. 2,360 ft.

(Continued on Page 85)

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Rotary operations unless otherwise designated)

NORTH LOUISIANA

BIENVILLE PARISH

Company, farm and location— Remarks:

Ark.-La. P. L. Co.'s No. 1 Gayoso Co., Inc., 560 ft. N, 660 ft. E, SW cor. NW SW, Sec. 14-16-10 ..... S.W; plugged and abd. 2,613 ft.

Arcadia Drilling Co.'s No. 1 Atkins, 175 ft. W, 120 ft. N, SE cor. NW NE, Sec. 27-18-6 ..... Drlg. 625 ft.

BOSSIER PARISH

Andrews & Davlin's No. 1 Nattin, 100 ft. N, 250 ft. W, C, Sec. 15-22-14 ..... To set 4½-in. with packer.

Flint River Oil Co.'s No. 1 C. L. DeMoss, 200 ft. S and E, NW cor. SE NW, Sec. 22-22-13 ..... Coring 2,863 ft.

Dr. W. N. Hankins' No. 1 Newell, 300 ft. S and W, NE cor., Sec. 12-19-11 ..... Drlg. 1,050 ft.

D. L. Perkins' No. 1 Ardis & Co., 1,127 ft. N, 198 ft. E, SW cor., Sec. 13-15-11 ..... Set 10-in. 90 ft; S.D.

Rombaugh et al's No. 1 Allison, SW SE, Sec. 10-19-13 .... S.D. 1,600 ft.

CADDO PARISH

Pelican Nat. Gas Co.'s No. 1 Cooper et al, 1,810 ft. E, 1,064 ft. S, NW cor., Sec. 29-18-14 ..... Abd. 3,648 ft.

United Gas Public Service Co.'s No. 1 M. K. Smith, 660 ft. S, 2,640 ft. W, NE cor., Sec. 33-23-16 ..... Drlg. 4,228 ft.

CALDWELL PARISH

Carter Bell's No. 1 Taylor, 150 ft. S, 150 ft. E, NW cor. NE SE, Sec. 17-14-4 ..... Derrick.

Hudson et al's No. 1 Burton, Sec. 35-12-2e ..... S.D. 2,950 ft.

CATAHOULA PARISH

National Drlg. Co.'s No. 1 Marsh McMillen, 70 ft. N, 100 ft. W, C, Sec. 26-9-6 ..... T.A. 3,097 ft.

CLAIBORNE PARISH

Leue Oil Co.'s No. 1 Kinder, 154 ft. N, 642 ft. E, SW cor. SE, Sec. 2-21-7 ..... Drlg. 3,125 ft.

DE SOTO PARISH

Keatchie O. & G. Co.'s No. 1 Hallie Smith (was H. E. Weichert's), NE SE, Sec. 31-14-15 ..... S.D. 2,350 ft.

S. S. Meek, tr.'s No. 1 Wagner, 300 ft. S and E, NW cor. SE NW, Sec. 5-12-14 ..... Derrick.

Ben Merritt, tr.'s No. 1 Walluma, NE cor. SW SW, Sec. 29-12-13 ..... Set 6-in. csg. 2,580 ft; T.D. 2,657 ft.

E. T. Oakes' No. 1 R. H. Bryant et al, 200 ft. N and W, SE cor. NE NW, Sec. 30-13-15 ..... Coring chalk 1,950 ft.

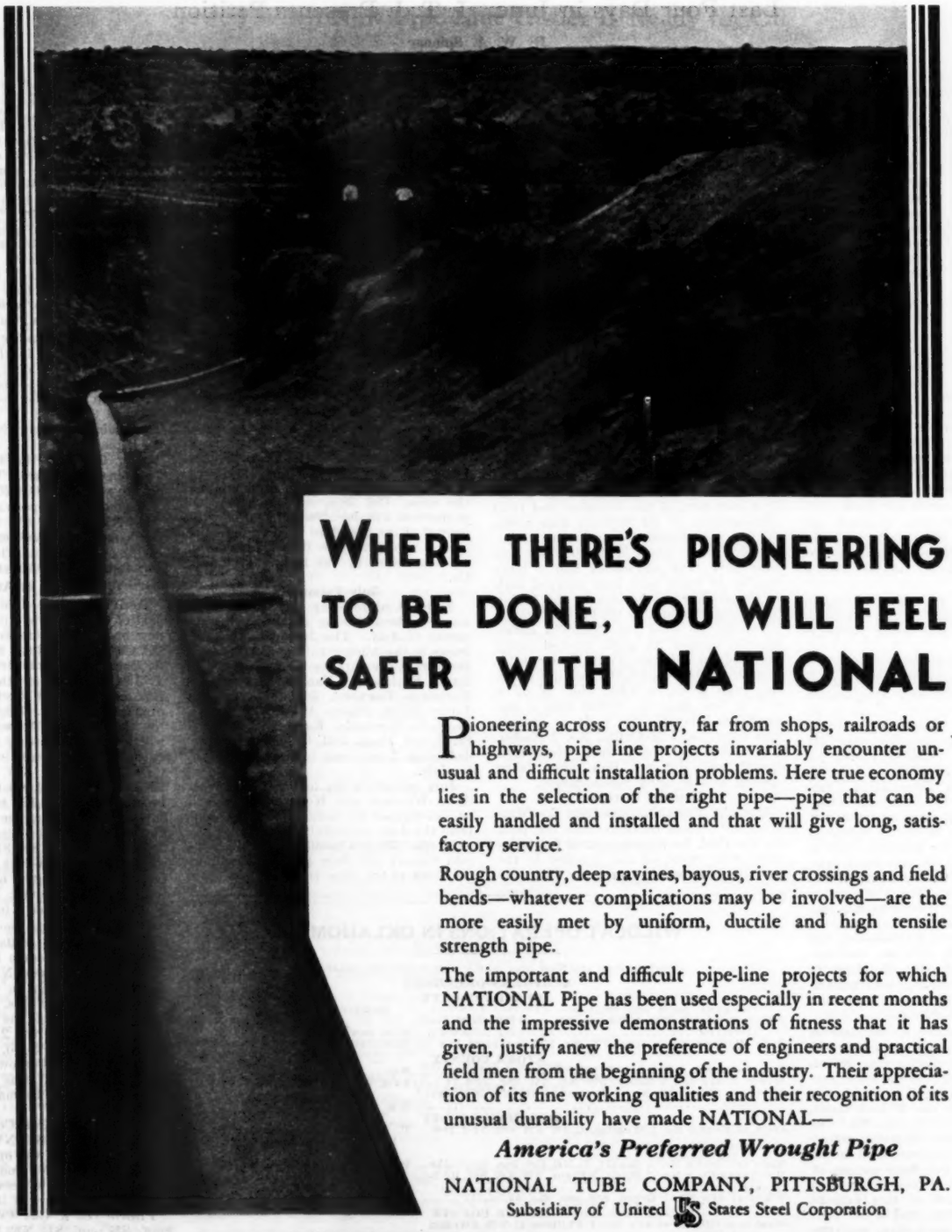
Reilitt Oil Co.'s No. 1 Gannon hrs., 300 ft. S and E, NW cor. NW NE, Sec. 13-11-16 ..... S.D. 1,410 ft.

Walters-Nicholson, tr.'s No. 1 Jim Guy, Sec. 3-11-13 ..... Began June 8; set 10-in. 200 ft; drlg. 330 ft.

NATCHITOCHES PARISH

W. M. Coats' No. 1 Collins, 730 ft. N, 50 ft. E, C, Sec. 28-9-10 ..... T.A. 4,091 ft.

(Continued on Page 84)



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NATIONAL PIPE

Increased Oil Demand in Oklahoma City

Commission Permits a 200,000-Bbl. Production for Last Four Days in June. I. T. I. Presents Petition

By W. A. Spinney
Staff Correspondent, Oklahoma Fields

The daily production of oil from the Oklahoma City Field was increased June 27, for four days, from 6 per cent to 10 per cent of its rated potential. The increase in the allowable production was ordered by the Oklahoma Corporation Commission, after the field umpire, Otto Bradford, had made application.

The order of the corporation commission states that the pipe line demand based on the recent shipments of the previous 10 days indicates that the companies have been taking more than the present allowable. In order to meet the existing demand for more crude oil from the Oklahoma City Field the commission has increased the allowable to 200,000 bbls. a day. The rated potential of the field is 2,569,059 bbls. a day. The previous order allowed 150,000 bbls. a day from the field.

The State's production declined approximately 13,000 bbls. a day for the week ending June 27, when the daily average was approximately 543,800 bbls. a day.

During the week the eight hundredth producer was completed in the Oklahoma City Field, which is now about 2½ years old.

I. T. I.'s Petition

The Indian Territory Illuminating Oil Co. asked the Oklahoma Corporation Commission for permission to produce an aggregate of 12,500 bbls. a day from 41 Silicious lime wells in the Oklahoma City Field. The request is similar to the petition filed by Wirt Franklin on May 22, when the Oklahoma Corporation Commission was asked to divide the Oklahoma City Field into four separate producing zones and to allow the operators with production in the Silicious lime to produce their wells wide open until practically all the oil was exhausted and then plug the wells. The Corporation Commission took the Wirt Franklin petition under advisement.

The Indian Territory Illuminating Oil Co.'s petition says the Silicious lime has approximately 600,000 bbls. of oil yet to be produced. The company asks permission to take the oil from this formation at the rate of 12,500 bbls. daily.

The presence of water in the lime in large volume is the reason given for the request, the petition stating that if this is not done water will ruin the other producing areas by seeping into the Lower Simpson and on into the Wilcox sands.

At the time Wirt Franklin filed the first petition there were 72 wells producing from the Silicious lime with a potential based on the four-hour gauges of 128,101 bbls. a day. The Corporation Commission's one-third of this amount was 42,700 bbls. a day, and 6 per cent of that, or 2,668 bbls. a day, was the allowable from that zone under the present order.

Wirt Franklin alleged in the original petition that a continuance of the present system of proration in the Oklahoma City Field and the present allocation of the market demand for oil from the Oklahoma City Field, whereby more than half of the total market demand is allocated to and absorbed by the small area in the north end of the field known as the north Wilcox sand pool, would result in the grossest discrimination against the older pools in the field and in favor of the north Wilcox pool and result in further and additional waste and destruction of the recoverable reserves of oil in the older portions of the field where the water encroachment now obtains. The petition further stated it would allow the Silicious lime area to produce and market 75 per cent of its potential production. The Indian Territory Illuminating Oil Co. owns more than one-half of the producing wells in the Silicious lime zone and asked that it be given the opportunity to get all the oil possible from the horizon before it has a chance to ruin the other producing zones in the field.

The Indian Territory Illuminating Oil Co. says in the petition that it has secured an additional demand for 22,500 bbls. of oil daily since it fixed its quota at the May hearing. The petition cites that there are 28 wells in the Silicious lime zone which cannot make their allowable due to water intrusion. It is asked that these wells be allowed to flow to capacity and that a total allowable of 12,500 bbls. of oil a day be fixed for 41 other producers in the Silicious lime zone.

It is expected other companies will join the Indian Territory Illuminating Oil Co. in the move. It appears to be the first step toward the depletion and final abandonment of all Silicious lime wells. Water encroachment continues to increase. Several leases in the Silicious lime zone have been abandoned and a large number of wells have been plugged back to the shallow gas horizon by the Indian Territory Illuminating Oil Co. and others.

During the week the Champlin Refining Co. opened its wells allowed under the Federal District Court order after posting $200,000 bond. On the first gauge the wells produced 9,691 bbls. of oil a day, or less than the 10,000 bbls. a day maximum allowed. The wells on production were No. 1 McCullip, No. 1 Naden, No. 1 Seal and No. 2 Seal, which last-named well did not flow after being opened, and is being reconditioned.

Demand Increases

The pipe line shipments from the Oklahoma City Field continue near the peak for the field. Increased demand for Oklahoma City crude oil has resulted in the pipe line companies increasing the shipments. It will also give the operators a chance to reduce the oil in field storage. If another potential gauge is ordered by the Oklahoma Corporation Commission the operators will have considerable empty storage on the leases to handle the increased flow of crude while the potential gauges are being secured.

Strippers Seek a Market

Producers of stripper wells in Okmulgee, Tulsa and Muskogee Counties that will be without an outlet after July 1, are negotiating with other purchasers of crude oil to get new connections. Not much of definite nature has been accomplished up to the present time.

A committee of four operators are engaged in the negotiations to get another outlet for the oil produced in these counties that the Standard Oil Co. of Louisiana has been taking for the last six or seven years in the Morris, Bald Hill, Bixby and Schulter Fields. The committee is composed of R. E. Downing, Tulsa; Alexander Massey, Kansas City; L. J. Hutchins, Mounds, and John M. Speary, Okmulgee.

The total daily average production in the area, 726 bbls. a day, from 246 properties will be affected by the withdrawal of the Standard Oil Co. of Louisiana. Approximately 600 bbls. of this oil is gathered by the Prairie Pipe Line Co.

July Potentials

State Umpire Ray M. Collins announces the following potentials for the month of July. The July potentials for leases in the Allen (shallow and Wilcox), Bowlegs, Carr City (settled production), East Earlsboro, Earlsboro (proper), Earlsboro Townsite, Little River, East Little River, Maud, Mission, Sasakwa, Searight, Seminole, East Seminole and St. Louis Pools will be determined by deducting 3 per cent from the June potentials.

July potentials for leases in the West Asher-Wanette and Konawa Pools will be determined by deducting 5 per cent from the June potentials.

If the West Chandler Pool in Lincoln County the July potentials will be the same as the June potentials.

The class "A" wells in South Earlsboro Pool will be determined by allowing the wells to flow to full capacity July 1 and the class "B" wells on July 2. The total production from the "A" and "B" wells on these dates will be the potentials for the month.

Leases in the Wewoka Townsite Pool will take a three-hour open gauge, 7 a. m. to 10 a. m., July 1, and eight times the amount of oil produced during this period will be considered the daily potentials for the month.

The West Seminole Pool and the flush wells in the Carr City Pool will be open to full capacity for one day from 7 a. m., July 1, to 7 a. m., July 2.

West Chandler Extended

The production in the West Chandler Pool in Lincoln County was extended a quarter of a mile to the west by another producer during the week. Tom Slick Oil Co. and Stanolind Oil & Gas Co.'s No. 3 Kentzelman, SE cor. NE SW Section 7-14-4, made 4,894 bbls. of oil the first 24 hours. The next day's gauge was 1,185 bbls. in eight hours. The oil was found in the sand at 5,004-26 feet.

The same company's No. 4 Kentzelman, NE cor. SE SW Section 7-14-4, on the same lease, has cemented the 8-inch casing at 4,920 feet. The top of the Viola was found at 4,893 feet.

Wildcatting in Atoka County

Activity increased in the southeastern part of Oklahoma in Atoka County. Three new operations were announced: Moyen Oil Co.'s No. 1 Ross, SW cor. NE NW Section 26-1-14, was drilling at 350 feet. T. J. Campbell and others' No. 1 Baird, NW cor. NE SW Section 31-1-13, was preparing to spud. Edgerton and others' No. 2 Holland, SW cor. Section 6-1-15, was rigging up getting ready to spud.

In Pittsburg County, National Royalty Co.'s No. 1 Ross, NW cor. SW Section 17-7-18, found 250,000 feet of gas a day in sand at 1,810-2,125 feet and were preparing to shoot. Another test nearing completion was Utilities Producing Co.'s No. 3 Vail, NW cor. SE SE Section 8-7-18, was landing the 6-inch casing at 1,816 feet. In the Quinton area the Choctaw Gas Co.'s No. 2 Lovier, NW cor. SW NE Section 8-7-18, was a location.

In the Carr City Pool, in the Greater Seminole district, wells are shut down for proration. Amerada Petroleum Corp.'s No. 1 Tiger, NE cor. NW SE Section 3-8-5, was shut down in the Wilcox sand. The test made 220 bbls. from the Hunton lime while taking the shutdown time. Same company's No. 2 Tiger, SE cor. SW NE Section 3-8-5, was opened up after taking its shutdown time and shot with 15 quarts. It was swabbing and it was estimated to be making 40 bbls. of oil an hour.

Prairie Oil & Gas Co.'s No. 6 Hyde-Fixico, NW cor. SE NW Section 3-8-5, Seminole County, was opened after being shut in for proration and flowed 600 bbls. of oil from the Wilcox sand and 200 bbls. from the Hunton lime in 24 hours.

Prairie Oil & Gas Co.'s No. 2 Hassman, SW cor. SE NE Section 3-8-5, in Carr City Pool, was fishing at 4,157 feet in Simpson sand. It produced 95 bbls. of oil from the Hunton lime.

The second producer was showing oil in the new area north of the East Earlsboro Pool, Prairie Oil & Gas Co.'s No. 1 Sager, SE cor. SW Section 8-9-6, swabbed 102 bbls. of oil in five hours from the Wilcox sand at a total depth of 4,245 feet. The well is the west offset to the discovery well in the area which was completed several months ago.

Oklahoma City Field

Champlin Oil & Refining Co. and Hall & Briscoe's No. 2 Central, NE cor. SW

(Continued on Page 88)

WILDCAT OPERATIONS IN OKLAHOMA

(Descriptions are East and North unless marked otherwise)

NORTHERN OKLAHOMA

Company, farm and location—	Remarks:
ALFALFA COUNTY	
Smith Brothers' No. 1 Forbes, SE cor. NW NW Sec. 12-27-11w	Shut down 1,232 ft.
J. W. Bailey's No. 1 Acre, SW cor. NE Sec. 14-24-11w	Shut down 5,502 ft.
ATOKA COUNTY	
Campbell's No. 1 Baird, NW NE SW Sec. 31-1-13	Rig.
Moyer et al's No. 2 Miller, SW NE NW Sec. 26-1-14	Drlg. 280 ft.
Edgerton Edwards' No. 2 Rowland, SE NE NW Sec. 6-1-15	Rig.
BECKHAM COUNTY	
Price-McFann's No. 1 Webster, C SW SW Sec. 34-8-26w	T. D. 2,344 ft.; plugged back to 1,890-1,900 ft.; 1,500,000 ft. gas completed.
Mid-Continent's No. 1 Schaff, C NE SW Sec. 22-11-22w	Waiting on cement to set 430 ft.
Mid-Texas Co.'s No. 1 Sidell, NE cor. SW SW Sec. 17-2-22w	Shut down 2,550 ft.
White et al's No. 1 Green, SW cor. Sec. 34-10-24w	Shut down 3,575 ft.
BLAINE COUNTY	
Washoma Oil Co. et al's No. 1 Phillips, C NW SW Sec. 13-19-10w	Shut down 5,115 ft.
CADDO COUNTY	
Abernathy & Brown's No. 2 Houston, Sec. 24-6-13w	Shut down 1,115 ft.
COAL COUNTY	
McCraw Oil Co.'s No. 1 Ward, NE SE Sec. 35-1-8	Drlg. 1,548 ft.
Whitney et al's No. 1 Miller, SE NE Sec. 10-2-8	Shut down 760 ft.
COMANCHE COUNTY	
G. W. Stogner's No. 1 Doebel, C SW SW Sec. 3-3-9w	Shut down 1,450 ft.
GARFIELD COUNTY	
E. L. Love et al's No. 1 White, SE cor. NW Sec. 9-24-6w	Shut down 5,850 ft.
GARVIN COUNTY	
Malarnee et al's No. 1 Phillips, NE SW SE Sec. 24-2-2w	Drlg. 4,335 ft.
Skinner's No. 1 Elrod, SW cor. Sec. 13-2-3	Shut down 1,120 ft.
GREER COUNTY	
French's No. 1 Murphy, SW NW Sec. 23-7-21w	Shut down 1,645 ft.
HARPER COUNTY	
Sinclair Oil & Gas Co.'s No. 1 Howell, C SW SW Sec. 14-26-24w	20,000,000 ft. gas 5,350-5,400 ft.; total depth 5,539 ft.; shut down; sprayed 50 bbls. gasoline.

(Continued on Page 127)

Ritz-Cantonites Prepare for Market

Committee of Producers Discuss Program to Be Followed When New Pipe Line Outlet Is Ready for Oil

By W. A. Spinney
Staff Correspondent, Kansas Fields

Production from the State of Kansas shows an increase for the week ending June 27 of approximately 1,000 bbls. a day. The daily average for the same seven days was approximately 101,900 bbls.

Courtney B. Davis announced the sale of a half interest in two producing properties, one in the Ritz-Canton Pool, in McPherson County, and the other in the Davis Pool, in Marion County, to H. K. Beardmore. The consideration was reported to have been $50,000. H. K. Beardmore will have the operation of both leases. One of the properties in Ritz-Canton Pool, an 80-acre lease with one producing well in the E half of the SW of Section 19-19-1w, has a rated potential of 1,700 bbls. a day. The other property is 80 acres in S half of NE Section 7-19-3, Marion County, with two wells producing from the Viola lime, completed about 2½ years ago, now making around 105 bbls. of oil a day.

Ritz-Canton Operators Meet

A meeting of operators with production in the Ritz-Canton Pool was held in Wichita following the joint conference of the Public Service Commission and the oil advisory committee.

The operators discussed the proration program in the Ritz-Canton and Decker area and the taking of new potential gauges in the field. The last general potential tests taken in the field was April 1, approximately 90 days ago.

It was voted to continue the same proration in the field and to take new potential gauges two weeks before the new White Eagle Oil & Refining Co.'s pipe line is completed into the pool, which is expected to be in about 60 days. The same method of taking the tests under the unit plan of operations was also voted.

The operators will co-operate with the Kansas sanitation committee in preserving the fresh water sands from pollution by salt water from the wells.

The operators' committee for the Ritz-Canton Pool, Frank O. Prior, president of Stanolind Oil & Gas Co.: Ralph B. Roark, Shell Petroleum Corp., and E. R. Filley of The Texas Company was retained. Umpire Lloyd R. Pickrell was also retained and acts as secretary to the committee.

New Gasser in Reno County

The newest gas well completed in the Haury district in the northeastern part of Reno County is T. Palmer and others' No. 1 Goering, NW cor. SE, Section 1-23-4w, making 22,000,000 feet of gas a day. The gas was found in chat at 3,285-3,349 feet. The first gas was found at 3,331 feet. The well was spraying some oil, but indications were that it will be completed as a gas well. It is an offset to the discovery well completed by Study-Turner and others which made 23,000,000 feet of gas a day. The north offset to the new well is a combination well rated at 200 bbls. of oil and 7,000,000 feet of gas a day. The Derby Oil Co. has taken over all the interests in the No. 1 Goering in Section 1-23-4w, a quarter of a mile north of the discovery well in the area from the Reserve Oil Co. The Derby Oil Co.'s well was recently completed for 100 bbls. a day.

North of Caldwell in the western part of Sumner County, the Sumner Oil & Gas Co.'s No. 1 Porter, NE cor. SW, Section 12-33-4w, was preparing to land the 10-inch casing. It was drilling at 1,500 feet on the last report. The Carter Oil Co. and Blackwell Oil & Gas Co. and others' No. 2 Rex, SE cor. NW SE, Section 22-33-3w, about 8 miles north of Caldwell, was drilling at 3,480 feet and will drill a few feet deeper before landing the 6-inch casing.

Sedgwick County Operations

Operations near Wichita in Sedgwick County show the Derby Oil Co.'s No. 6 Eastborough, SE cor. NW NE, Section 19-27-2, in the Eastborough Pool, has been completed for 12 bbls. of oil an hour. It made 288 bbls. of oil in 24 hours from the chat at a total depth of 2,991 feet.

Another test drilling south of the city limits of Wichita is the A. M. Scroggins and others' No. 1 Wall, SW cor. NE, Section 4-28-1, it was spudding at 300 feet. The well is located a half mile east of the South Lawrence Road and a half mile south of Franklin Avenue.

The Magnolia Petroleum Co. announced it made another location in the southern part of Sedgwick County. The test will be No. 1 Pendulum, NW cor., Section 31-28-1w. It is located about 1 mile east of its previous test, the No. 1 Wise, which was abandoned as a dry hole. The Magnolia Petroleum Co. was once a large holder of acreage in the district, but now has only two sections of leases. The new test is being drilled because of lease requirements.

Near the Greenwich townsite in Sedgwick County, the Shell Petroleum Corp.'s No. 7 Fisher, NW cor. SE, Section 15-26-2, made 215 bbls. of oil in six hours from the Viola at 3,194-3,200 feet.

Good Well in Welch Pool

Another test in the Welch Pool of Rice County found oil. Phillips Petroleum Co. and others' No. 1 Rice, SW cor. NE Section 3-21-6w, flowed 841 bbls. of oil the first 18 hours. The oil was found in the chat at a total depth of 3,394 feet.

The Hugoton gas field in Stevens and Morton Counties has enjoyed a rapid development and is believed to be one of the largest gas reserves in the State and may soon become active. A short time ago the Hugoton gas field was a farming community; a gas well was found in the district and soon the usual boom started, and at the present time there are 122 completed gas wells in the field with a potential of 800,000,000 feet of gas a day. It is believed that more than 100 new locations are to be made in a short time. Several interstate pipe lines are under construction from the Hugoton gas field and the first is expected to be completed and in operation in a few weeks. Gas from the Hugoton gas field will be used to supply part of the gas in this pipe line. When the other pipe lines are completed, which is expected to be in the fall of the year, additional tests are also expected to be started.

Ritz-Canton Area

Further development of the territory in the northeastern part of the Ritz-Canton Pool, in McPherson County, is expected as the result of the finding of a showing of oil in the Kansas City lime. It is a new producing horizon for the district, all other tests having been completed in the chat and the Viola formations. The favorable showing of oil was found in Harris & Haun's No. 1 Overman, NW cor. NE SE Section 20-19-1. The lime was found at 2,300 feet and the oil showing was sufficient to cover the slush pond. It is the first real showing of oil to be found in the Kansas City lime in this part of the State. The operators are drilling the test deeper at 2,700 feet.

Another location was announced by the same operators for No. 2 Overman, NE cor. SE Section 20-19-1, a quarter of a mile east of the No. 1 Overman.

Darby Petroleum Corp.'s No. 1 Kaegi, NE cor. SW Section 20-19-1, found the top of the chat at 2,920 feet and has landed 8-inch casing at 2,924 feet. The cement plugs are expected to be drilled in a few days. The test may extend the gas production to the west.

The rig is up on the new location of the Schaffer Oil Co.'s No. 1 McGill, SW cor. NE Section 7-20-1, where it is expected to start spudding in a few days. The rig is the most easterly one in the southern part of the Ritz-Canton area and if production is found it will extend fhe field more than a quarter of a mile to the east.

Mid-Kansas Oil & Gas Co.'s No. 1 Unruh, SE cor. SW, Section 25-19-2w, on the west side of the Ritz-Canton Pool, found a showing of oil in the top of the chat at 2,940 feet. The crew was underreaming the 8-inch casing to the top of the pay horizon. The total depth of the test is 2,942 feet. It is located in the chat producing part of the Ritz-Canton Field. Gled Oil Co.'s No. 1 Anderson, NE cor. NW, Section 30-19-1, found a showing of oil in the chat at 2,937-43 feet. The crew was drilling deeper to test the Viola lime. Commercial production is unlikely to be found in the chat in this part of the field.

Rosenthal and others' No. 1 Deilman, NE cor. SE SW, Section 35-19-2w, a half mile west of production in the Ritz-Canton Pool, has resumed drilling operations after being shut down for about a week. When drilling operations stopped the total depth of the test was 2,460 feet. Several new tests are expected to reach the pay horizons in the Decker gas area of McPherson County in a few days. McPherson Oil & Gas Co.'s No. 2 Wallace, C NE SE, Section 11-19-2w, was shut down with casing cemented at 2,905 feet. The top of the chat was found at 2,904 feet. Same company's No. 3 Giffin, C SE NW, Section 14-19-2w, found the top of the chat at 2,895 feet and after drilling to a total depth of 2,897 feet, it was shut down waiting for the cement to set before drilling deeper. The company's No. 3 Meyers, C NE SE, Section 14-19-2w, was drilling at 2,650 feet and should reach the top of the chat in a few days. The company's No. 2 Hill, C SW NE, Section 10-19-2w, in the northern part of the Decker gas field, was drilling at 2,400 feet.

An interesting wildcat test in the western part of Rice County, was believed to be runnning favorably on structure. E. H. Langston and others' No. 1 Purcell, NW cor., Section 33-19-9w, Rice County, was drilling at 2,100 feet. It appears to be running favorably with the Shell Petroleum Corp. and others' No. 1 Ploog, which is located about 5 miles to the north, and was completed for 2,000 bbls. of oil a day. The No. 1 Purcell, is expected to be drilled to the Silicious lime.

Harwood Oil Co.'s No. 1 Beal, NE cor. SE, Section 28-23-11, is swabbing 275 bbls. of oil a day from the Bartlesville sand at 1,918-86 feet. The well is located in the extension area northwest of Hamilton, in Greenwood County. The north offset was spudding. It was H. Gore and others' No. 1 Beal, SE cor. NE, Section 28-23-11.

D. J. Wilson is expected to start operations on a test on the Sharp farm about 5 miles east of Fall River in Greenwood County in the near future. D. J. Wilson has a block of approximately 800 acres under lease in the area.

Chase County

Kline and others' No. 1 Koegebachn, C NE NW, Section 28-19-6, is spudding.

Harvey County

J. P. Flanagan is building the rig for No. 1 Sheridan, C SW, Section 32-22-1.

Cowley County

Gralapp and others' No. 1 Pierce, C SW SE, Section 32-32-5, is spudding. Williams and others' No. 1 McCullum, NW cor. NE, Section 13-33-4, is spud-

(Continued on Page 89)

WILDCAT OPERATIONS IN KANSAS

(Descriptions are East unless marked otherwise)

Company, farm and location—	Remarks:
BARTON COUNTY	
Syndicate Oil Co.'s No. 1 Boertz, NW SE SE, Sec. 13-18-12w	Shut down 2,440 ft.
Skelton Oil Co.'s No. 1 Ott, C SE SE, Sec. 16-19-14w	Drlg. 2,420 ft.
McCool et al's No. 1 Tsern, NW SE NE, Sec. 12-20-11w	Shut down 1,600 ft.
CHASE COUNTY	
Borden et al's No. 1 Atkinson, NW SE, Sec. 18-18-7	Rig on ground.
CLAY COUNTY	
Crystal Oil et al's No. 1 Tivier, SW cor., Sec. 19-8-2	Shut down 2,700 ft.
COFFEY COUNTY	
Heyburg's No. 1 Kroft, SE SW SE, Sec. 30-22-14	Shut down 1,565 ft.
COWLEY COUNTY	
Fisher et al's No. 1 Hurt, C SW SE SE, Sec. 11-34-3	Rig.
Roth & Faurot's No. 1 Reedy, SW NW NE, Sec. 8-32-8	Shut down 1,040 ft.
DICKINSON COUNTY	
Severs et al's No. 1 Lavengood, NE SW, Sec. 13-13-2	Shut down 3,850 ft.
ELLSWORTH COUNTY	
Keyes Bros.' No. 1 Gregory, SW cor. Sec. 23-16-9w	Rig on ground.
Hershey et al's No. 1 Schultz, C NE, Sec. 9-14-8w	Drlg. 2,960 ft.
Alyward et al's No. 1 Stratman, SE NW SE, Sec. 1-17-10w	Silicious 3,255-71 ft.; 117 bbls. 2 hrs.; shut in; est. 2,000 bbls.; no pipe line connection
Aladdin Pet.'s No. 1 Stoddenberg, C SW, Sec. 22-16-10w	Drlg. 2,775 ft.
Milton et al's No. 1 Kester, SE NE, Sec. 6-14-9w	Drlg. 3,150 ft.
FORD COUNTY	
Carter Oil Co.'s No. 1 Everett, C NE, Sec. 22-29-21w	Drlg. 4,774 ft.
Swain et al's No. 1 Taylor, C NW, Sec. 21-25-24w	Shut down 5,105 ft.
GRAHAM COUNTY	
Schleimeyer et al's No. 1 Clark, SW NE NE, Sec. 11-9-25w	Drlg. 4,556 ft.
HARPER COUNTY	
Beeler et al's No. 1 Bear, C NE, Sec. 21-35-6w	Shut down 1,830 ft.
KINGMAN COUNTY	
Skelly Oil Co.'s No. 1 Miles, NE cor., Sec. 30-27-10w	1,635-40 ft. 2,000,000 ft. gas; at 2,005-20 ft. 6,000,000 ft. gas; at 2,133-42 ft. 3,000,000 ft. gas; showing oil 3,385 ft.; T. D. 3,441 ft.; Shut down; estimated at 600 bbls. a day.
LINCOLN COUNTY	
Buck et al's No. 1 Schulz, C SE NE SW, Sec. 19-11-6w	Rig on ground.
MARION COUNTY	
Midwell's No. 1 La Master, NW cor., Sec. 31-22-4	Shut down 650 ft.
MORTON COUNTY	
Hydraulic Oil Co.'s No. 1 State Land, NW SE, Sec. 22-34-43w	T. D. 3,640 ft.; shut down.
MORRIS COUNTY	
Un..hol et al's No. 1 Bersuch, NW SE NW, Sec. 10-17-7	Machine.
Hankerson et al's No. 1 Cessman, SW SE, Sec. 24-16-9	Drlg. 2,478 ft.

The FLAGS OF THE LONG, LONG, GRIND

By WILLIAM HERSCHELL

We are the Flags of the Long, Long, Grind,
They call us the Speedway's Voice;
Ours is a language—in code designed—
We spell both Regret, Rejoice!

You, born with nature that finds thrill sweet,
May ask what our symbols mean;
Fancy yourself in the Driver's seat—
Then wait for the Flag of Green!

Bombs overhead and the motors' roar
Make maze of your comrades' calls;
Now you are crossing the wire to score—
The Start—and a Green Flag falls!

Dizzying miles and the Long, Long, Grind
Bring flashes of flags that say
Volumes in words of the silent kind—
Their language is yours today!

Yellow means "Caution!"—the Flag of White
Spells "Halt!", as all drivers know;
You, unaware of hazardous plight,
Stop—fix—then away you go.

Orange, a voice with Circle of Blue,
Not meaning to halt, harass,
Silently sends its warning to you—
Another car seeks to pass!

Old King's Blue—well counting your place—
Announces the last, long lap;
Onward you go at maddening pace—
One round—and you're "On the Map!"

Then comes Checkered—King Flag of us all—
Victory—Plaudits—and Gold!
Once—UP IN FRONT—you have seen it fall—
You'll never mind growing old!

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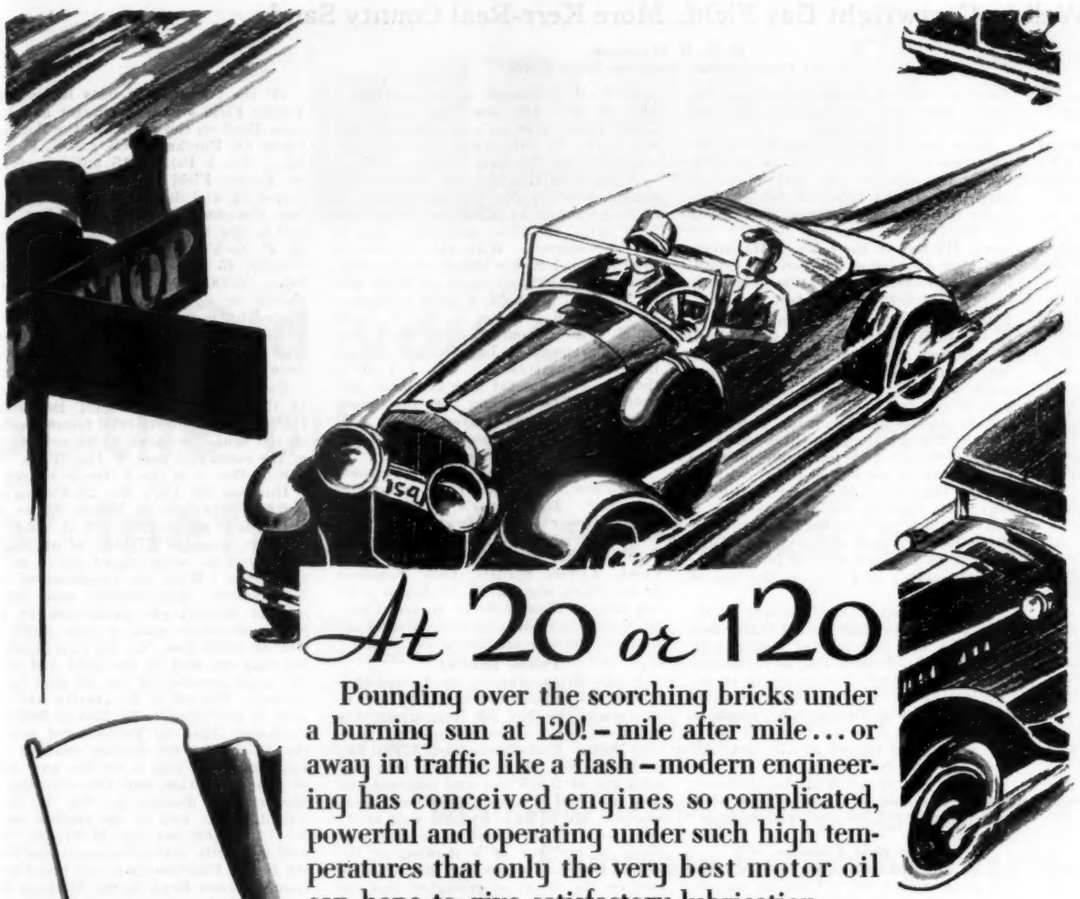

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Barnsdall engineers working with a background that reaches back to the very founding of the Industry itself have produced such an oil – BE SQUARE *Stabilized* Motor Oil the lubricant that ignores the thermometer giving you perfect protection always. Also distributors of MONOMOTOR OILS, a complete line tested for perfect performance over a period of years.

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Guadalupe County Showing Interesting

Looks Like Chance for Another Edwards Lime Pool. Oil Well in Cartwright Gas Field. More Kerr-Real County Sands

By B. D. Stevenson
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., June 29.—W. J. Walton's No. 1 Zoboroski, 6 miles southwest of the Darst Creek Field in Guadalupe County, topping the Austin chalk at 2,183 feet, 97 feet higher than Adams & Lyle's No. 1 Zoboroski and with a showing of oil, and the Houston Oil Co.'s No. 23 Cartwright in southeastern Live Oak which swabbed 77 bbls. of oil in 2½ hours were leading features of the week. Along with them another wildcat in the Real-Kerr territory has found a good thickness of sand and Evans & Gant's No. 1 Love deepened to 3,600 feet has had two more sands.

W. J. Walton's No. 1 Zoboroski is in a territory so evidently faulted that wildcatters have persisted in hunting for the production which they thought must be there. Several tests have been drilled in years past and Eugene Sights, north of the Guadalupe River and in the same general trend, drilled some tests that helped prove the structure. Adams & Lyle and some others drilled last year. Walton's test had enough gas at 940-50 feet to make a commercial gas well. He set casing at 2,125 feet to shut out the gas after it had blown out once at 1,700 feet. Topping the chalk at 2,183 feet it has a good showing of oil and he has cored to 2,196 feet and will test. The showing of oil in the chalk was enough to cover the ditch. It is to be an Edwards lime test but will try out the chalk first. Joe Bruner's first well in the Bruner Field in Caldwell County produced from the chalk and several wells in that field made fairly good producers in that formation. It was the Sun Oil Co. that carried a test to the Edwards and brought in a producer.

Walton's test is making business pick up in the Balcones fault zone from Luling southwest. It is looking at this stage about as likely a chance for another Edwards lime pool as anything that has happened in a long time.

With the exception of the Walton test and some new locations announced in the upper counties of the Balcones fault zone that district has been devoid of interest the past week. Smith and Barnes in southeastern Bastrop County are down 415 feet in their No. 1 Marbarger and have an odor of gas and are expecting to encounter a serpentine plug within the next few hundred feet.

M. O. Rayor's No. 1 Dunlop and R. R. Ogden's No. 1 Alexander in Caldwell County, two tests that had a little showing in the Edwards have not shown much progress. Rayor's test is northwest of the town of Luling and at 2,525 feet he had a little showing that some thought would make a small 15-bbl. well. He had water and has been plugging back trying to get rid of it but without success thus far. Northeast of Luling near Dale Ogden's No. 1 Alexander is still at 2,353 feet. It had a showing of oil in Edwards but also water. Casing was set with packer and he is trying to pull the casing and test at the top of the chalk.

In Williamson County Balfrey & Zizinia topped the Edwards at 1,260 feet and were 100 feet in and coring with no oil, and Citizens Oil Development Co.'s No. 1 Jarrell, 2 miles south of the Chapman Pool, was in shale at 1,360 feet and Hays & Gee, 6 miles south of Georgetown, at 725 feet were in Glenrose which they topped at 670 feet. All three are first reports.

A little farther south of the Chapman Pool in Lee County A. H. Wheeler has been bailing at 3,200 feet with a showing of gas.

Kerr-Real Counties

Kerr and Real Counties with six active tests around No. 1 Love, in the territory north of the Balcones fault, again furnished more sand information. Evans & Gant started to deepen their No. 1 Love which made a small oil well with lots of water at 3,391 feet, the discovery well of the region, and at 3,502 feet they ran into another sand with a good showing of oil, estimated to be good for 8 bbls. as it is and now have another at 3,600 feet. Due to some trouble they are forced to pull casing as they were unable to get the tools to the bottom.

Along with this new development the same operator's No. 1 Seiker-Mears, 3 miles northeast at 3,340 feet is 50 feet in a sand, the first important sand it has encountered. With this 50 feet of sand in No. 1 Seiker-Mears on the northeast and a 100-foot sand at 4,185 feet in No. 1 J. M. Auld, 4 miles northwest in Real, and 200 feet in No. 1 A. D. Auld, 4 miles southwest in Real, that region is shown to have plenty of sand in the Pennsylvanian. No. 1 Love is the only one thus far that has made production. The amount of the sands pleases the operators. No. 1 A. D. Auld with a showing of oil at 4,007 feet lost the bailer and is fishing.

In the proven fields of the Balcones fault there is practically no drilling at this time. Joe Bruner's No. 1 Malone in the Bruner Field is down about 1,300 feet and is the only test drilling. There is no drilling in the old Luling, Darst Creek, Lytton Springs, Dale, Somerset or anywhere else. J. H. Hickey is drilling some shallow wells in Medina County at Chicon Lake to develop some oil that has an especial lubricating value.

Pettus District

In the Pettus district the United Production Co. abandoned at 4,403 feet in salt water its No. 37 Ray, about 1½ miles southeast of nearest production in the Pettus Pool but about 1,500 feet north of No. 11 Ray which blew out with gas at 3,815 feet and cratered and was lost, and is about 4,000 feet southwest of No. 3 Ray, a small well at 4,000 feet. No. 37 failed to develop anything in the way of a showing at the depths where expected and this seems to confirm the theory of geologists that the Pettus area is quite badly faulted and cross faulted.

J. M. Davis' No. 1 Ray, a mile southwest of the townsite, with dry holes between it and the townsite pool, seems to further confirm it. The Davis test at 3,925 feet is to be brought in this week.

Of the two wildcat tests between the Pettus Field on the southwest and Raccoon Bend on the northeast the Southern Crude Oil Purchasing Co. and V. F. Neuhaus' No. 1 Pettus, 15 miles northeast of Pettus Field in Goliad County, is rigged up and drilling a water well. It was abandoned at 3,853 feet last year and is now to deepen to the Pettus sand. F. P. Zoch's No. 1 Dobard in Lavaca County, 45 miles farther northeast, was below 2,500 feet late last week and should be down around 3,000 feet or deeper by now. There is 130 miles of territory from Pettus to Raccoon Bend with only a small amount of wildcatting done in it thus far.

Following the trend of the Pettus zone to the southwest the Gulf Production Co. is starting on its fifth formation test on the Schaeffer ranch which covers most of the northwest part of Jim Wells. No. 5 Schaeffer is in the J. Doyle Survey.

Houston Oil Co.'s No. 23 Cartwright in the Cartwright or Mount Lucas gas field where gas is produced at about 2,100 feet, swabbed 77 bbls. of oil in 2½ hours and is being rigged up to go on the pump. With the exception of No. 1-A Boothe, three-quarters mile northeast of nearest gas production in the field and which made a very small oil well at 5,280 feet, No. 23 Cartwright is the only oil well in the field and gives the most promise of an oil pool being opened. The oil is 24 gravity and the sand is presumed to be 250 or 300 feet shallower than the Pettus sand and in the Oligocene, not having reached the Jackson. The well is on the west edge of gas production and the company is preparing to deepen its No. 14 Cartwright, a gas well in the shallow sand, No. 14 is 1,000 feet west of No. 23. The well is a little nearer the coast line than the Pettus Field but is in the broad zone from Raccoon Bend to the Mirando district that has been much in the thought of the operators of Southwest Texas. It opens up new possibilities in that zone.

Corpus Christi District

Houston Oil Co. is still making hole in its No. 2 Rand Morgan in the center

(Continued on Page 88)

SOUTHWEST TEXAS PROVEN AREAS

COOKSEY POOL—BEXAR COUNTY

Company, farm and location—	Remarks:
Penn Oil Co.-Sun Oil Co.'s No. 1 Pollok, 1,100 ft. SW of No. 1 Cooksey in John W. Ralli Sur.	T. D. 1,420 ft.; reset csg.

DOBROWOLSKI POOL—BEXAR COUNTY

Gatlin Oil Co.'s No. 7 I. A. Beck, 150 ft. SW line, 1,351 ft. SE line of tract, Montez Sur.	Abandoned location.
Patton & Yocum's No. 1 T. Strunk, 1,351 ft. from SE line, 150 ft. from NE line of tract	T. D. 727 ft.; installing pump.
W. S. Rogers et al's No. 1 L. Donnop, Juan Montez Sur.	T. D. 612 ft.; shut down.

BRUNER POOL—CALDWELL COUNTY

Joe Bruner's No. 1 Malone, A. Floyd Sur.	T. D. 1,312 ft.; drlg.

LYTTON SPRINGS—CALDWELL COUNTY

J. A. Harper's No. 4 Strawn, 150 ft. from N and E lines of tract in Pablo Martinez Sur.	T. D. 1,540 ft.; shut down.

EDDINGTON POOL—FALLS COUNTY

Eddington et al's No. 3 Llewellyn, George Allen Sur.	T. D. 1,070 ft.; fishing.

DARST CREEK FIELD—GUADALUPE COUNTY

Magnolia Pet. Co.'s No. 4 M. T. Klein, 300 ft. SE of No. 1	T. D. 1,600 ft.; drlg.

CHAPMAN POOL—WILLIAMSON COUNTY

Chapman et al's No. 2 Lawrence, S. Miller Sur.	T. D. 1,916 ft.; set 6⅝-in. csg.; waiting on cement.
Vitex Oil Co.'s No. 8 Kilgore, Simon Miller Sur.	T. D. 1,735 ft.; waiting on cement.

PETTUS POOL—BEE COUNTY

Cosden Oil Co.'s No. 2 J. M. Freeland, in John Pace Sur. No. 1	T. D. 260 ft.; set surface csg.
J. M. Davis et al's No. 1 Ray, 330 ft. from N and E lines of John W. Williamson Sur.	T. D. 3,925 ft.; drilling in.
J. L. Mauldin's No. 1 fee, 1,300 ft. N of S line, 150 ft. E of Medio Creek, Kerr Sur.	T. D. 3,862 ft.; sidetracking at 3,000 ft.
Geo. N. Moore et al's No. 2 Freeland in John Pace Sur., 1,000 ft. from S line, 600 ft. from E line of survey	Rigging up.
United Prod. Co.'s No. 37 Ray, 3,300 ft. from SW line, 996 ft. from SE line of Willis A. Moore Sur.	T. D. 4,403 ft.; abnd. in salt water.
United Prod. Co.'s No. 39 Ray, 1,130 ft. to SE line, 2,396 ft. to SW line of T. Hanson Sur.	Location.

CARTWRIGHT POOL—LIVE OAK COUNTY

Houston Oil Co.'s No. 14 Cartwright, 1,000 ft. W of No. 23 Cartwright	T. D. 2,100 ft; rigging up to deepen.

(Continued on Page 81)

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

ATASCOSA COUNTY

Company, farm and location—	Remarks:
Glen Mathis, trustee's No. 1 Martin, 150 ft. to NE line, 2,640 ft. to SE line of tract in Jose Antonio Navarro Sur.	T. D. 2,012 ft.; drlg.

BLANCO COUNTY

Hardy-Sitton's No. 1 McMillan	T. D. 696 ft.; fishing.
Liles-Adams et al's No. 1 Stanford, 150 ft. to S line, 1,420 ft. to E line of James Stanford's No. 155	T. D. 970 ft.; standing.
McCleary et al's No. 1 Schenling, 900 ft. to SE line, 600 ft. to S line of J. A. Rouse No. 118 Sur., 4 miles SW from Blanco City	T. D. 574 ft.; shut down.
J. R. Meek's No. 1 Walker, 360 rds. from W line, 482 rds. from S line of 375-ac. tract in Sur. No. 32	T. D. 1,078 ft.; abnd. dry.
C. Rosenfield's No. 1 Hohenberger, 800 ft. to W line, 1,260 ft. to N line, Sur. No. 94	T. D. 712 ft.; shut down.

BASTROP COUNTY

Schimmel & Batts' No. 1 J. E. Ferguson, 160 ft. from NW line, 1,600 ft. from NE line of tract in J. Doyle Sur.	T. D. 1,684 ft.; comp. est. 100 bbls. on pump.
Schimmel & Batts' No. 2 Ferguson, 622 ft. W, 17 degrees N of No. 1 Ferguson in J. Doyle Sur.	Rigging up.
Smith & Barnes' No. 1 Marberger, 50 ft. W line, 1,360 ft. S line of tract in King & Millett Sur.	T. D. 415 ft.; drlg.

BELL COUNTY

Mildon Oil Co.'s No. 1 J. K. Edds, Maxiano Moreno Sur.	T. D. 875 ft.; drlg. shale.
C. O. Alford's No. 1 A. L. Keifer, 150 ft. from S and W lines of tract in Woodford Sur.	Location.
Vilas Oil Co.'s No. 1 B. F. Whittington, 9 miles E of Holland	T. D. 1,298 ft.; shut down.

BROOKS COUNTY

O. C. Woods' No. 1 J. G. Ramos, 959 ft. to E line, 788 ft. to S line of Tract 10, Blk. 3, Amos Dinn Subd., La Lestena grant	T. D. 427 ft.; drlg.
Ike Howeth's No. 1 Singer, 400 ft. E of Humble's No. 1 Singer	T. D. 1,872 ft.; in sand showing oil.

BEE COUNTY

Alexander et al's No. 1 McFall, 3 miles S Skidmore	T. D. 1,510 ft.; standing.
Grebin & Woods' No. 1 Riggs, 4,800 ft. to E line, 200 ft. to N line of James Nowland Sur., 6 miles W of Skidmore	T. D. 272 ft.; drlg.

(Continued on Page 81)

MADE OF AMERICAN

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• Did you ever figure the Value of the oil wasted by the breathing of inefficient lease tanks?

Many producers do not realize the extent of losses suffered when lease tanks are allowed to breathe. Accurately conducted tests have shown that the reduction in volume and gravity of oil in lease storage is quite considerable unless the tanks are equipped to hold the vapor pressures built up within the tanks. And any waste of oil here is a direct loss in income.

Maloney VAPOR-PRESSURE Tanks Eliminate Breathing Losses

These tanks are equipped with valves operating at 16 ounces pressure and 2 ounces vacuum—enough to prevent breathing under ordinary conditions—and are built amply strong to withstand such pressure and vacuum. Thus they positively restrict the waste of rich vapors and add to your income the value of a considerable amount of oil which would otherwise escape into the atmosphere.

Our *Vapor-Pressure* construction includes: not less than 12-gauge, highly rust-resistant, Keystone Copper Steel; half-inch heat-treated bolts; heavy 2-inch angle ties and reinforcements; wide gussets on ties and ladders; and exceptionally long-lasting and bright aluminum paint, made with China Wood Oil base. This construction also insures exceptional durability.

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MALONEY

Second Well at Clear Lake Important

Three New Gulf Coast Fields Opened Within a Month to Be on Unit Basis of Operation. Indications of Another Geophysical Field

By Neil Williams
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., June 29.—Following closely on the opening of two new salt dome fields in Coastal Louisiana since the middle of the month, a second good well was completed late the past week on the Lockwood (Clear Lake) geophysical prospect in eastern Fort Bend County, Texas. The latter well, Cullen & West and Gulf Production Co.'s No. 1-A Lockwood, extended production of the Lockwood Field 2,500 feet to the southwest.

Flowing 85 bbls. hourly, or at the rate of 2,040 bbls. daily, on a half-inch choke, this well came in Saturday morning definitely establishing that area as a Coastal field of importance. Although 389 feet lower than the discovery well of the same operators the dip is easily accounted for in the distance which separates them. Bottom of the second well is 3,476 feet compared with 3,087 feet in No. 1 Lockwood & Sharp, the discovery well. With 9⅝-inch casing at 3,450 feet, 30 feet of 6⅝-inch screen was set on bottom with 4½-inch liner to top. Pressure of the new well is 145 pounds on the liner, no pressure being on the casing. Gravity of the oil is 24.2 degrees (corrected for temperature), or practically identical with that in the discovery well which was 24.5 degrees (corrected).

The discovery well, located 1,123 varas south and 425 varas east out of the northwest corner of the east half of the John Rabb Survey, was completed May 21, the first test drilled on the prospect. It flowed at the rate of 400 bbls. initially on a quarter-inch choke. Pending completion of a line to the field by Gulf Pipe Line Co., the well was pinched to an eighth-inch choke for 3 bbls. hourly. When outlet was provided it was opened on a half-inch choke and flowed 60 bbls. an hour and at present is flowing 100 bbls. hourly, or 2,400 bbls. daily, on an inch choke, all being pipe line oil.

All on Unit Basis

The two new fields in southern Louisiana, previously reported, included Lake Grand Ecaille, southern Plaquemines Parish, and Bayou Choctaw, Iberville Parish. In each of these three new fields, all opened since May 21, acreage is owned and controlled on unit basis of operation. Virtually all the prospective acreage at Lockwood is held by Cullen & West and Gulf Production Co. jointly, that at Lake Grande Ecaille by Humble Oil & Refining Co., Gulf Refining Co. and Shell Petroleum Corp. jointly, and that at Bayou Choctaw by Standard Oil Co. of Louisiana and Gulf Refining Co. jointly. Thus in none of these fields will there be extensive, competitive operations at this time.

At Lake Grande Ecaille and Bayou Choctaw locations have been made for an additional test each to be drilled at once. At the former, Humble Oil & Refining Co. is building derrick for No. 2 State-Lake Washington, which will be north of the discovery well, No. 4 Cockrell-Moran, completed June 19, flowing 500 bbls. of pipe line oil in the first 9 hours on a three-quarters-inch choke and then pinched to 10 bbls. hourly on an eighth-inch choke. The latter is a cap rock well, being in cap at 1,074-1,158 feet. However, it is producing only from the last 17 feet of cap as the 9⅝-inch casing was run to 1,141 feet.

At Bayou Choctaw, Standard Oil Co. has made location for its second test, No. 1 Wilbert-Choctaw, which is 250 feet west of the discovery well, No. 1 Gay, in Section 52-9s-11e. The latter was completed June 22 with 1 joint of 3-inch screen in sand at 4,353 feet and a full string of 2½-inch tubing to the top. For a short time it flowed at the rate of 3,000 bbls. daily on a three-eighths-inch choke, but it was pinched to 150 bbls. daily on an eighth-inch choke.

Geophysical Discoveries

The opening of these three fields in rapid succession indicates the potential possibilities of new production on the Gulf Coast, and at the same time speaks well for geophysical science to which their discoveries are credited. Two of the prospects, Lake Grande Ecaille and Bayou Choctaw, have been proved as domes by the finding of cap rock and salt. While five tests were required for the opening of commercial production at Lake Grande Ecaille, first tests proved the other two fields, if nine shallow sulphur tests drilled by Texas Gulf Sulphur Co., are not included at Bayou Choctaw.

Indications of still another new geophysical field on the coast were given late in the week when Vacuum Oil Co. went into a sand showing heavily of oil at 6,961-79 feet on its Iowa prospect, which straddles the Calcasieu-Jefferson Davis Parish line. Casing is being run to test. This prospect was opened for production the latter part of January of this year when this same test was completed in a sand at 5,001-08 feet flowing 250 bbls. daily on a three-eighths-inch choke. The well, however, failed to hold up, and the hole has been deepened.

Victoria County

T. B. Slick estate's No. 1 McFaddin, J. Vairan Survey, Victoria County, which has been in process of completion since early in June, finally has been brought in successfully as a gas well but is spraying considerable salt water. Gas pressure registers 1,275 pounds through quarter-inch chokes. In completing the well the hole was deepened by accident from 3,512 feet to 3,529 feet and four joints of 4-inch insert screen on the bottom of a full string of liner run through the 6-inch screen to bottom. Previous efforts to complete the well at 3,512 feet failed due to high pressures and inability to keep the screen on bottom. This well, a wildcat, extends production 3½ miles to the north of United Production Corp.'s two wildcat gas wells, Nos. 1-A and 2-A McFaddin in the Maria Traviesa Survey. The latter wells being in sand at approximately 3,740 feet, the Slick well is considerably higher.

Much interest at present is centered on United Production Corp.'s No. 4-A McFaddin, a half mile to the north of the company's Nos. 1-A and 2-A, and located between them and the Slick well. That test late in the week was coring in shale at 3,715 feet and should be reaching the gas sand. Much rests on this test in proving the trend of production and possible linking of the United and Slick wells. Tests in other directions from the two United gassers either have missed the sand or tested salt water.

Barbers Hill

Humphreys Corp. completed another good subsalt well on the extreme north flank of the Barbers Hill Dome in its No. 2 T. S. Fitzgerald, which with 47 feet of 5-inch (outside diameter) screen on bottom at 5,259 feet, came in flowing 70 bbls. hourly on a half-inch choke. This is the fifth producer completed in this particular area, acreage in which is entirely controlled by Humphreys Corp. With the exception of the first, which was located further out from the dome and was drilled to 6,404 feet, all these producers have been at approximately the same depth around 5,100-5,250 feet in sand underlying a salt "overhang."

Further indications of playing out of the west flank pool at Barbers Hill, which several months experienced an active development boom and where a series of good producers were brought in, were given the past week in completion of Yount Lee Oil Co.'s No. 3 Winfree and The Texas Company's No. 2 Winfree, both of which made only a comparatively small amount of oil with large percentages of water. The former set 176 feet of 5-inch screen at 5,538 feet and flowed 120 bbls. of fluid, 48 per cent water, initially but later increased water production to above 75 per cent. The Texas Company's well made 40 bbls. net oil, total fluid showing 90 per cent water, from sand at 5,622 feet. The latter is a workover, having been completed earlier in the month making 1,000 bbls. of fluid, 90 per cent water.

Other Completions

Other completions of the week included Houston Oil Co.'s No. 10 Wilson Heard, Refugio, 50 bbls., 3,650-57 feet; the same company's No. 5 Mrs. M. H. Ryals, Refugio, 25 bbls. net oil, 3,624-48 feet; United Production Corp.'s No. 3 Mitchell, Refugio, gas well, sand 6,411-21 feet, The Texas Company's No. 264 Landslide, Humble, pumping 60 bbls., 4,162 feet; Sun Oil Co.'s No. 6 Janner, Clay Creek, pumping 50 bbls., 1,288 feet; Rio Bravo Oil Co.'s No. 14-A Settegast, Pierce Junction, pumping 350 bbls., 5,375 feet; the same company's No. 22-A Settegast, Pierce Junction, dry gas, 4,187 feet; The Texas Company's No. 13 State, Lake Barre, 400 bbls. of fluid, 50 per cent water, 3,854 feet, and Marrs McLean's No. 11 Gray, Vinton, 200 bbls. of oil with a slight show of water, 2,695 feet. Additional details on these completions are given in an accompanying drilling report.

Two Abandonments

Pure Oil Co. has abandoned its No. 13 Mayes at Lost Lake, Chambers County. This test, a deep wildcat located on the extreme north flank of the dome, went into anhydrite cap at 5,490 feet and was quit at a total depth of 5,560 feet. It is the second deepest test at Lost Lake and follows the drilling of No. 5 Lost Lake, a deep wildcat on the extreme west flank, which was abandoned last February in salt and anhydrite at 7,471 feet. No other rigs are running at Lost Lake and this field now joins the long list of coastal domes and fields on which operations have been suspended at least temporarily.

Vacuum Oil Co. has abandoned as dry its No. 7 State, northwest extension district of Lockport, Calcasieu Parish. It was in sandy shale at 6,769 feet. It was drilled as a west offset to Yount Lee Oil Co.'s No. 1 Miller, discovery well of the extension pool, which is producing from a 6,500-6,600-foot horizon. The abandonment apparently defines the west edge of the pool. The test showed salt water in the producing horizon but was deepened in hopes of finding a possible deeper pay. Four wells have been completed in the area.

GULF COAST FIELDS AND WILDCATS

Week Ended June 27
All Rotary

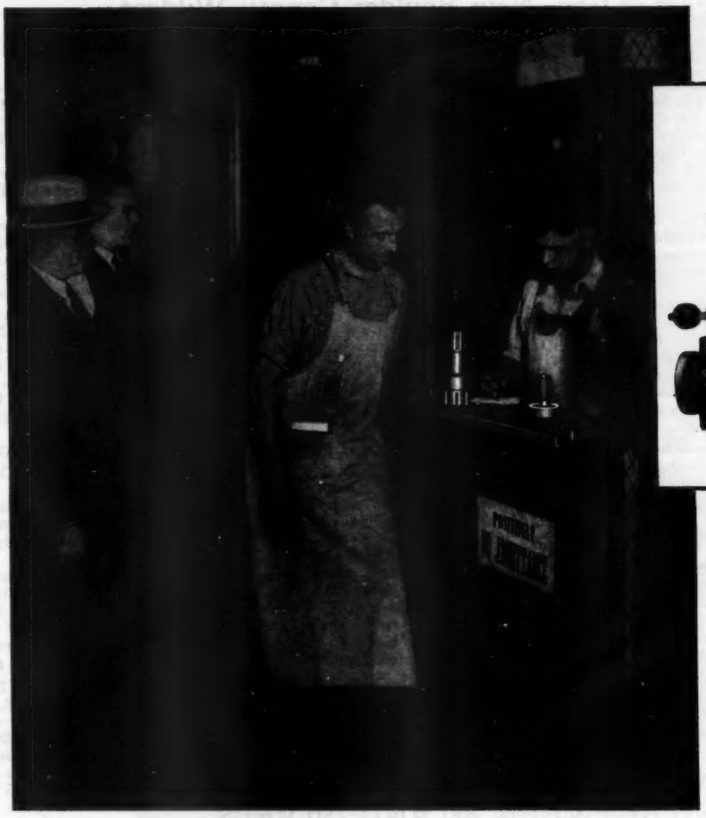
BARBERS HILL—CHAMBERS COUNTY

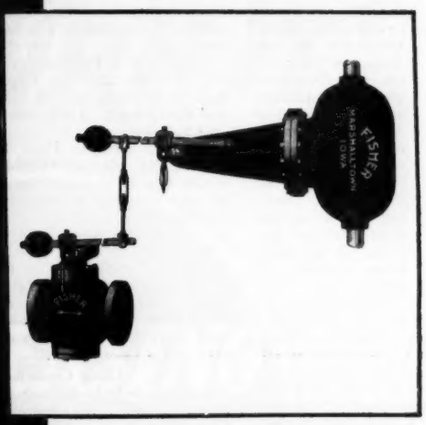
Gulf Prod. Co.'s No. 4 Wilburn (D.D.), Henry Griffith League, 1,400 ft. W line and 50 ft. S line of lease	Total depth 5,290 ft.; milling out 4,908 ft. to sidetrack.
Humphreys Corp.'s No. 6 E. H. Winfree, W. D. Smith Sur., 50 ft. from N line and 50 ft. from W line of tract	Total depth 4,100 ft.; straightening hole.
Humphreys Corp.'s No. 2 T. S. Fitzgerald, Henry Griffith League, 300 ft. from N line, 65 ft. from E line of tract	Set 47 ft. 5-in. (O.D.) screen 5,259 ft.; comp. flowing 70 bbls. hourly, ½-in. choke.
Humphreys Corp.'s No. 1 Fitzgerald-Meadows, Henry Griffith League, 50 ft. S and 100 ft. E of NW cor. of tract	Drlg. hard lime 3,596 ft.
Mills Bennett Prod. Co.'s No. 1 Gulf-Fisher (workover), William Bloodgood Sur., 50 ft. from SW line and 250 ft. from SE line tract	Total depth 5,357 ft.; reaming.
Mills Bennett Prod. Co.'s No. 4 Gulf-Fisher, Wm. Bloodgood Sur., 300 ft. from W line, 80 ft. from N line tract	Coring sand showing oil 2,964 ft.
Sinclair Oil & Gas Co.'s No. 3 Smith, W. D. Smith Sur., 50 ft. out of S cor. of tract	Drlg. rock 4,665 ft.
Sun Oil Co.'s No. 2 Smith, W. D. Smith Sur., 75 ft. from W line, 50 ft. from N line of tract	Sandy shale showing oil 5,061 ft.; cmtd. 7-in. (O.D.) csg.
Sun Oil Co.'s No. 3 Smith, W. D. Smith Sur., 50 ft. from S line, east offset Yount Lee Oil Co.'s No. 3 Winfree	Drlg. sand rock 5,028 ft.
Sun Oil Co.'s No. 1 Anna Higgins, Wm. Bloodgood Sur., 230 ft. from E line and 31 ft. from S line 10-acre tract	Drlg. rock 2,674 ft.
The Texas Company's No. 2 Winfree, west flank, W. D. Smith Sur., 264 ft. N., 50 ft. W at right angles out of SE cor. of lease	Reset screen 5,632 ft.; comp. flowing 40 bbls. net oil, 90% water, sanded.
The Texas Company's No. 4 Wilburn (D.D.), Henry Griffith League, approximately 1,700 ft. from W line and 50 ft. from S line of tract	Total depth 5,292 ft.; sidetracked 5,124 ft. to sand 5,188 ft.; tested salt water; to work over.
The Texas Company's No. 6 Wilburn, Henry Griffith League, 250 ft. W of No. 4 and 50 ft. from S line of lease	Drlg. sand 3,768 ft.
Yount Lee Oil Co.'s No. 3 Winfree, W. D. Smith Sur., 190 ft. out of NE cor. of tract	Set 176 ft. 5-in. screen 5,538 ft.; comp. flowing 120 bbls. fluid, 48% water, 15 lbs. pressure.

HUMBLE—HARRIS COUNTY

Rio Bravo Oil Co.'s No. 2 H.E.&W.T., Adams Sur., 250 ft. N along railroad tract from No. 1 and 25 ft. W from center of said tract	Total depth 4,742 ft.; drill pipe stuck 3,598 ft.; sidetracking 3,132 ft.

(Continued on Page 81)





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fluid control

New Northeast Colorado Operations

Hobbs Pool Proration Program Extended. Berthoud Dome Test Has 300,000 Feet of Gas. New Boulder County Wildcat

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., June 29.—Operators in the Hobbs Pool have reached an agreement for the extension of the present proration program for another six months. The daily outlet for the last half of June remains practically unchanged at 37,021 bbls. Drilling operations in New Mexico are down to a minimum number of wells.

The principal activity in Colorado centers in the northeastern part of the State where two wells in Weld and Morgan Counties are nearing the objective and several new operations are reported getting ready to start. The Raddatz Corp. had a flow of 300,000 feet of gas in its No. 1 Red Rock School in the Berthoud Field at a depth of 100 feet. One wildcat is spudding on the Lyons structure in Boulder County. The "ice cream" well of the Continental Oil Co. in Jackson County has been opened up and is making 150 bbls. daily at a temperature of 110 degrees below zero at the surface.

The Utah Southern Oil Co.'s wildcat in Utah has settled to 15 bbls. daily and may be drilled deeper.

The Producers & Refiners Corp.'s South Ferris test in Carbon County, Wyoming, is being abandoned and the Mountain Fuel Supply Co.'s No. 1 Cappers, in North Baxter Basin, is abandoned.

Montana reported only routine operations with the most activity in the Cut Bank Field in Glacier County where the Montana Power Co. is drilling 7 of a total of 20 wells to be put down.

NEW MEXICO

The present proration program for the Hobbs Pool will be continued for another six months from July 10 as a result of a meeting of the advisory committee in Fort Worth last week at which the situation was discussed. Two alternate plans were said to have been considered. One was to close down the field entirely while oil was selling at 25 cents per barrel, and the other was to agree to produce 100 bbls. daily from each of the 40-acre units. This would have cut the production from the present allowable outlet of 37,021 bbls. daily to 12,700 bbls. Since the state officials would not agree to this, it was decided to continue the present program. The potential production of the pool on June 16, as reported by Umpire C. G. Staley, was 1,150,443 bbls. daily from 144 wells on 127 units. This potential will be in effect for the last half of June. While a formal agreement still awaits the approval of the State, no difficulty in the way of a renewal is expected. The allowable outlet for the last half of June was placed at 37,021 bbls. daily, practically the same as has been in effect since May 1 when the quantity was increased by approximately 5,000 bbls. daily. This increase was made possible by a decrease in oil run from the Wink Pool in Texas.

Drilling operations in New Mexico are at the lowest ebb reported for several years. There are no wells active in the Hobbs, Lea or Eunice Pools and only one in the Jal area. Activity is limited to a few scattered wildcats.

Lea County

Leonard & Levers' No. 1 Justis, C SE NE, Section 19-25-37, in the Jal area, is bottomed at 2,795 feet in lime at which depth the hole has been mudded to kill a flow of 15,000,000 feet of gas per day so that fishing for the tools could be started. The operation is temporarily shut down waiting for fishing tools.

Culberson & Conrad's No. 1 State, C NE, Section 22-18-34, Caprock area, is drilling at 2,380 feet in salt. It topped the anhydrite at 1,800 feet and the salt at 1,925 feet.

Western Drilling Co.'s No. 1 State, SE NE NE, Section 16-20-32, northwest of the Lea Pool, is drilling at 2,610 feet in lime and had a show of dead oil at 2,575-80 feet.

De Baca County

Matador Oil Co.'s No. 1 Wood, NE SW SW, Section 6-4n-20, Salada Creek, is bottomed at 3,200 feet in granite wash. The 6⅝-inch was cemented with 50 sacks at 3,180 feet to shut off water. Just above this depth it was reported to have had a show of oil.

Luna County

Angelus Oil & Mining Co.'s No. 3 State, C NW SE, Section 20-21-10w, near Deming, is resuming at 6,100 feet after being shut down for several weeks. It has been in the Pennsylvanian formation for some time.

Valencia County

Thomas B. Harlan and others' No. 4 Harlan Ranch, a new operation, is drilling at around 1,000 feet with rotary equipment. It is 600 feet east of No. 3, which was abandoned at 6,900 feet. The well starts in the Mancos shale and the Pennsylvanian is topped at around 5,000 feet. Acme Development Co.'s No. 1 Santa Fe, SW NW, Section 27-7n-4w, is drilling at 4,978 feet.

McKinley County

Johnsonwood Oil Corp.'s No. 1 Hannett, SW cor., Section 12-15-10w, Walker Dome, is drilling at 150 feet.

COLORADO

Morgan County

The Midwest Refining Co. is core drilling a block of leases comprising 10,480 acres located to the southeast of Fort Morgan, mostly in Townships 2 and 3n, Range 56w. The northwestern corner of the block lies about 4 miles southeast of Fort Morgan. The Magnolia Petroleum Co. has some acreage in the block and the Indian Territory Illuminating Oil Co. is drilling its Fort Morgan test to the southwest. The last named company, the Texas Production Co., the Phillips Petroleum Co. and the Producers & Refiners Corp. has some tracts around the block. The acreage was assembled by Clem S. Lee, county assessor of Morgan County, and A. C. Lusby. No announcement has been made as to any plans for a deep test. This is the block that is being cored by members of the geological staff of the Midwest working as drillers, and not the block southeast of Greeley as previously reported. All the geological work on the Beebe Draw block southeast of Greeley has been completed.

An unconfirmed report says that A. C. Grandbouche, trustee for the Independent Oil & Refining Co., has let contract for a well on the William Schmidt lease in the NE, Section 19-6n-60, east of the Greasewood Dome discovery well in Weld County. This lease is held by the Platte Valley Petroleum Corp., which drilled the discovery well, and was reported taken over two weeks ago by the Colorado Crude Oil Purchasing Co. The last named concern, with which George A. Vincent is connected, was also reported to have acquired the Frankie Alice Tatum tract and to have let contract for a 7,000-foot hole. This has not, however, been confirmed.

The Indian Territory Illuminating Oil Co.'s No. 1 State, C NE NE, Section 16-1n-57, is shut down for repairs at a total depth of 4,090 feet. It completed rigging up rotary tools, but has not yet made any new hole below the depth at which it has been standing for several months.

Weld County

Reiter-Foster Oil Co.'s No. 1 Ida Johnson, C NE NW, Section 24-6n-61, Greasewood Dome, is drilling below 5,700 feet and is expected to be a completion some time in July. The Platte Valley company's No. 1 Patterson, the discovery well, which the Ida Johnson well offsets, is now making 368 bbls. daily natural. It has held steadily at an average of 350 bbls. daily since settling down to that figure last December.

Larimer County

Raddatz Corp.'s No. 1 Red Rock School, NE NE NE, Section 20-4n-69, Berthoud Dome, had a gas sand at 100 feet which gauged 300,000 feet in 24 hours. The gas is being saved between the 12½ and 10-inch and is being used for fuel. At 685-725 feet it cut a sand that showed a little gas, but did not prove commercial when shot. It is drilling at 800 feet. This well is only a few hundred feet from the Standard Oil Co. of Colorado's No. 1 Hall which gauged 1,068,000 feet in 24 hours from the same sand at 680-700 feet. This sand was not cut in other wells and apparently is an erratic stray formation. Standard Oil Co. of Colorado's No. 1 Wilson, NW cor. SW, Section 21-4n-69, is standing at 1,250 feet total depth. Colorado Producers, Inc.'s No. 1 Foster-Motz Reservoir, SW SE SE, Section 17-4n-69, is drilling at 250 feet. This formerly was known as William Mosher's No. 1 Hall-Hogsett, and the location has been corrected. The lease is owned by Lydia S. Hall and Walter H. Hogsett and the well is inside the high water line of the Foster-Motz reservoir. P. J. Mosher, Inc.'s No. 1 Mead, SW SE, Section 17-4n-69, is shut down for water at 85 feet.

Boulder County

C. T. Ahlstrand's No. 1 Woodley, SE NE NW, Section 8-3n-70, Lyons Dome, spudded to 10 feet. This is north of the town of Lyons in which several wells drilled two years ago had shows of light oil at a depth of less than 100 feet. It started in a 12½-inch hole and will be drilled to around 1,100 feet.

Arapahoe County

MacDeb Drilling Co.'s No. 1 Fitzsimmons, NE, Section 7-4s-66, near Aurora, is preparing to resume at a total depth of 5,835 feet. A string of 4¾-inch will be run and carried. At this depth it is supposed to be in the top of a sand showing a little oil and gas. The hole was caving and it was decided to run and carry the 4¾-inch.

Adams County

Nettie M. Slatt's No. 1 Hills, SE cor., Section 27-3s-64, Watkins district, is drilling at 3,660 feet in shale showing a little lime and sand. The 8¼-inch is being carried 20 feet behind the tools.

Jefferson County

Ruby Hill Oil & Gas Co.'s No. 1 Braden, SE cor., Section 24-4s-69, near Den-

SOUTH TURNER VALLEY PRODUCER MAKING BETWEEN 200 AND 250 BBLS.

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, June 27.—In South Turner Valley, Mayland Oil Co.'s No. 6, Section 17-19-2w5, which some time ago got production in the lime at 4,935 feet, is unofficially reported making between 200 and 250 bbls. a day. Southern Lowery's No. 2 LSD 13, Section 9-19-2w5, is drilling 247 feet in the lime at 4,632 feet, with good gas showings reported. This test offsets the East Crest Oil Co. producers in Section 16-19-2w5. Southern Lowery's No. 1 in the south end of Section 9 got its production in the lime at 4,857 feet.

Lowery Petroleums' No. 2, NW, Section 17-19-2w5, is making new hole in the lime after drilling out cement at 6,438 feet.

In South Turner Valley, Hylo Oils' No. 1, LSD 12, Section 4-19-2w5, being completed by the Becker-Carscallen-Snyder Syndicate of Calgary on a royalty basis, is reported drilling below 2,060 feet and carrying 13⅜-inch casing. It is planned to set 8-inch on the lime. The test, which has been shut down for some months at around 1,780 feet, is the nearest offset, 1,200 feet south, of Mercury Oils' No. 1, now the largest producer in the field. Clarence Snyder, who brought in Royalite's No. 4, is supervising the drilling.

Miracle Oils' No. 2, LSD 16, Section 5-19-2w5, which resumed recently after a shutdown, is drilling at 2,954 feet after getting around 9,000,000 feet of gas in the McDougall-Segur sands. Alberta Superior Oils, Ltd., has arranged for completion of its No. 1 test in LSD 5, Section 21-19-2w5, which has been standing at 65 feet.

In the Central Turner Valley, British Dominion Oil & Development Corp.'s No. 2, LSD 6, Section 12-20-3w5, is deepening in the lime at 5,260 feet and will likely be carried to 5,275 feet. The test has developed some additional gas production.

Border Fields

In the Taber district, southern Alberta, Alberta Pacific Consolidated's No. 1 Cole-Hunter, LSD 3, Section 11-10-17w4, has resumed drilling after cementing at 3,330 feet. Casing was cemented in the top of an oil sand, and it is possible that a little deeper drilling will secure a commercial well.

On the Spring Coulee structure, Alberta Pacific's No. 1, LSD 12, Section 15-4-23w4, has been cemented for water shut-off around 5,900 feet. Considerable difficulty has been experienced in getting the water under control. Standard tools are being secured to complete the test, and the well may be shot in several promising sands encountered in drilling.

Hudson's Bay Tests

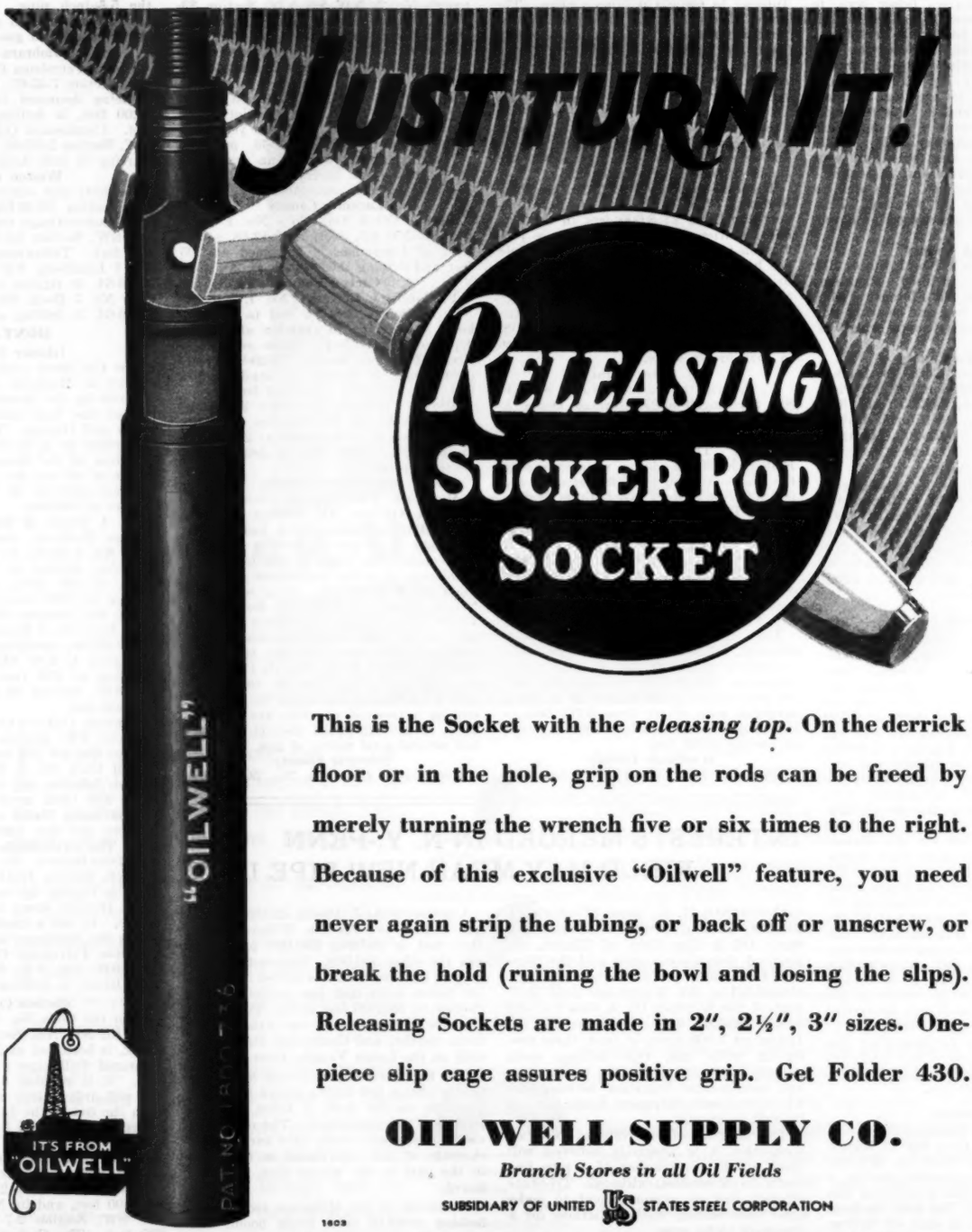
In the Keho Lake district, Hudson's Bay Oil & Gas Co.'s No. 1 Keho, LSD 2, Section 17-11-22w4, is reported preparing to resume after cementing at 4,230 feet.

In the Castor area, Hudson's Bay's No. 1 Paintearth, LSD 5, Section 27-39-15w4, is cleaning out to 4,480 feet preparatory to deepening in the lime.

Twin River Test

On the Twin River structure in the Shank Lake area, southern Alberta, Parco Oil Co.'s No. 1, LSD 16, Section

(Continued on Page 87)



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ver, is shut down for repairs at 3,920 feet.

Jackson County

Continental Oil Co.'s No. 1 Sherman, C NW NW, Section 12-9n-79, North McCallum Dome, which came in in December, 1927, at 5,110 feet, making carbon dioxide gas with high gravity crude oil that came from the hole at a temperature of 110 degrees below zero, is being allowed to blow to reduce the oil accumulated in the hole while shut down.

The purpose of this is to put the well in the most favorable condition for the manufacture of dry ice. The Dry Ice Corp. of America is erecting a small plant at the well and is expected soon to be shipping 10 tons a day by truck to Denver. This company built a small experimental plant last year and was said to have been successful in separating the oil from the gas. The well is making 150 bbls. of oil per day. This is about the highest gravity oil produced in the country.

Fremont County

Waterville Oil Co.'s No. 1 State, SE cor. NW, Section 16-18-09, Phantom Canon, north of the old Florence Field, is drilling at 1,700 feet and nearing the horizon in the Pennsylvanian which is to be tested.

Rio Blanco County

Magnolia Petroleum Co.'s No. 1 Maddock, C NW SE, Section 9-2s-96, Piceance Creek, is drilling at 225 feet. The California Co.'s No. 1 California-Raven, NW SE, Section 30-2n-102, Rangely Dome, is drilling at 615 feet.

Park County

South Park Oil Co.'s No. 1 Milligan, NE SE, Section 13-8s-76, Jefferson district, is shut down for casing at 2,065 feet. The 6⅝-inch will be run and carried. South Park Oil & Gas Co.'s No. 1 Esche, SE cor. NW, Section 5-9s-76, Muleshoe district, is shut down at 2,360 feet for 8¼-inch casing.

UTAH

Utah Southern Oil Co.'s No. 1 Balsey, C NE NE, Section 31-23s-21, Salt Valley Dome, Grand County, in which there has been developed one of the most important shows found in Utah for several years, is temporarily shut down at 3,500 feet and plans for handling the well are being considered. In 2½ days it bailed 302 bbls. of oil and the column was lowered from 3,400 to 2,300 feet. After the head was bailed off, subsequent tests showed the well had settled to 15 bbls. per day. The oil is green, paraffin base and tested 37 degrees on the Baume scale. It is being drilled by Utah Southern jointly with the Mountain States Petroleum Co. as a test of the lower Pennsylvanian and Ordovician formations below the salt beds. It went out of the salt into black and gray shale at 3,350 feet. A show of oil in conglomerate was encountered at 3,397 feet and two other shows in black sandy lime at 3,415 and 3,432 feet. There is no water in the hole and it is probable it will be carried on down to test the Ordovician.

Western Petroleum Drilling Co.'s No. 1 Nebeker, 1 mile west of the Utah Oil Refining Co.'s plant in Salt Lake City, is drilling below 1,300 feet.

WYOMING

Natrona County

Midwest Refining Co.'s No. 11 Middy, C NE NE, Section 23-35-79, Midway Dome, is still having trouble getting a test of the Muddy sand production due to the ground caving. The hole has been plugged to 5,933 feet to shut off bottom water and is cleaning out. The hole above the plug continues to cave.

Cuyler Oil Co.'s No. 1 Heery, SE, Section 23-36-85, Powder River, is bottomed at 1,830 feet and fishing for underreamer lugs.

Park County

The Secretary of the Interior has approved a price of 60 cents per barrel for government royalty oil in the Oregon Basin Field. This action is expected to assist independent operators in selling more of their crude to Montana refineries. Two years ago the Cody Petroleum Co., under a former management, contracted the sale of some of its production to The Texas Company at 53 cents per barrel, considerably below the posted price. The Secretary of the Interior declined to approve the contract on the ground that the price was too low and set a minimum of 85 cents per barrel for the oil. The Texas Company went into the courts and the right of the secretary to establish crude prices for oil on government land was bitterly contested, but the decision finally established the right of the Secretary of the Interior to name a minimum price. The price of crude from government-owned land was set at 70 cents on January 13, 1931, and it remained at that figure until May 19, when Secretary Wilbur directed that the former approval be suspended for a period of three months. Drilling operations in the Oregon Basin Field are at a standstill, no new wells having been started for nearly a year and several are shut down on top of the sand without being completed.

Resolute Oil Co.'s No. 1, NE SW NE, Section 17-57-101, Badger Basin, is reported drilling at 8,600 feet in the second Frontier sand. No increase in production in the past few feet of new hole has been reported and the well continues to make two heads per day, flowing around 20 bbls. at each head.

Midwest Refining Co.'s No. 24 Rosenberg, NE SE NE, Section 26-58-98, Frannie Dome, is drilling at 1,175 feet in dark brown shale.

Big Horn County

F. T. Griffith, trustee's No. 1, SE NE SE, Section 29-56-97, Garland Dome, is bottomed in the Embar at 3,715 feet and fishing. The hole is making considerable gas. The flow at the top of the Embar before mudding to continue to the Madison lime, was estimated at 40,000,000 feet a day. Griffith is trustee for the Portland Association, Inc., which took over the operation from S. C. Fertig.

Ohio Oil Co.'s No. 1 Smith, NE SE SE, Section 33-56-97, is drilling at 1,807 feet in the Frontier and will go a little deeper before completing it in that formation. It is making 1,500,000 feet a day while drilling.

Utah Southern Oil Co.'s No. 3 Government, NE cor. SW, Section 29-56-97, is drilling at 3,920 feet in lime. The formation is softening up some and better progress is being made. It is being deepened with rotary from 3,760 feet to the oil pay in the Madison lime expected at ground 4,250 feet.

Washakie County

Ohio Oil Co.'s No. 1 Strothers, SW SE NW, Section 19-45-92, Neiber Dome, is drilling at 5,842 feet.

Fremont County

Producers & Refiners Corp.'s No. 10, SE NW SW, Section 14-32-95, Big Sand Draw, is plugging back from a total depth of 5,345 feet and recemented at 5,192 feet with 55 sacks. The 8¼-inch was cemented at 5,169 feet. Same company's No. 2, NW SE NW, Section 33-34-92, Muskrat Dome, is drilling deeper. It has been cored to 5,703 feet and reamed to 3,660 feet. It cut brown shale at 5,660-81 feet and brown sandy shale at 5,681-93 feet.

Kinney-Coastal Oil Co., which drilled in a big gas well on the Pilot Butte Dome in the Muddy sand two years ago and opened a new gas field, probably will start another well at an early date to go to the gas horizon. The location has not yet been announced.

Laramie County

Prairie Oil & Gas Co.'s No. 1 Warren, SE NE SE, Section 22-13-68, southwest of Cheyenne, is bottomed at 205 feet and driving the 20-inch at 204 feet.

Carbon County

Producers & Refiners' No. 1, NE SE NE, Section 7-25-86, a test to the Dakota, is plugging to abandon at a total depth of 2,660 feet. Same company's No. 1, SW cor., Section 19-20-83, Overland Dome, is drilling in sand at 804 feet. The 4½-inch is at 490 feet.

Midwest Refining Co.'s No. 27 Union Pacific, NW SE SE, Section 11-20-81, Elk Mountain, is bottomed at 2,820 feet in light gray shale and is drilling and lowering pipe.

Sweetwater County

Mountain Fuel Supply Co.'s No. 1 Cappers, SW cor. NE, Section 2-19-104, North Baxter Basin, which had a show for 1 bbl. of oil per day with a little gas and considerable water in the top of the Sundance, is being abandoned at a total depth of 3,660 feet. Same company's No. 1 Tucker, C NW SE, Section 18-13-99, Alkali Dome, shut down at 3,630 feet for the winter last November, is resuming. This operation was started in the fall of 1927 by the Prairie Oil & Gas Co. and was taken over by the Mountain Fuel Supply Co. under the unit operating agreement covering gas development in the Hiawatha district. It has had several good shows of gas.

Converse County

Continental Oil Co.'s No. 50 Whiteside, NW SW SW, Section 9-33-76, Big Muddy, which is being deepened from the Frontier to the Lakota with rotary, is drilling at 3,572 feet in shale and shells. Olson Drilling Co. has the contract. John Ackard's No. 1 Morton estate, SE, Section 24-33-72n, 6 miles north of Douglas, is drilling at 1,415 feet in light brown shale and carrying the 5⅛-inch pipe. It has cut several thin streaks of coal and had some small shows of oil and gas.

Niobrara County

Indian Petroleum Co.'s No. 1, NE NW NE, Section 7-35-65, Lance Creek, which is being deepened to the Sundance at 4,200 feet, is drilling on iron at 3,948 feet. Continental Oil Co.'s No. 2 Rolff, NW, Section 2-35-65, an old producer, is starting to drill deeper.

Weston County

Leithart and others' No. 5, NE NW SE, Section 13-46-64, is spudding and the Chadron-Osage Oil Co.'s No. 13, NE cor. SW, Section 14-46-64, is drilling at 900 feet. Yellowstone Petroleum Co.'s No. 1 Lundberg, NE NW NW, Section 27-46-64, is rigging up and Lambie Oil Co.'s No. 7 Bock, SE cor. NW, Section 14-46-64, is drilling at 400 feet.

MONTANA

Glacier County

The Cut Bank area is the most active district in Montana due to the drilling of wells by the Montana Power Co. for its gas line now under construction to Butte and Helena. These wells are being drilled by L. B. O'Neil, trustee, vice president of the Montana Power Co. in charge of oil and gas development. The program calls for 20 wells. Those drilling are as follows:

No. 1 Taylor & Spikes, C SW SW, Section 35-36-5w, drilling below 2,000 feet; No. 1 State, C NW NW, Section 33-36-5w, drilling at 2,700 feet; No. 1 State, C SE NW, Section 34-36-5w, drilling at 1600 feet; No. 1 Schneider, C NE SE, Section 32-36-5w, drilling at 1,000 feet; No. 1 Berger, C SE NE, Section 2-35-5w, spudding at 300 feet; No. 1 Hughes, C NW SE, Section 3-35-5w, spudding at 250 feet; No. 1 State, C SW SW, Section 36-36-5w, drilling below 500 feet.

Montana Utilities Co.'s No. 1 Hogland, NW cor. SW, Section 13-34-6w, has rig up, but has not yet spudded. The B. & H. Oil Co.'s No. 1 Hanies, C SE SE, Section 2-34-6w, had its rig destroyed by fire. The tools were lost in the hole. It was being tested and was swabbing 30 bbls. per day when the rig caught fire. The total depth is 2,785 feet.

Jeffries-Haire's No. 1 Dawson, SE cor. NE, Section 17-31-12w, Dawson district, is rigging up to resume at 3,050 feet. It shut down at this depth last March. It had a small show of oil and gas in the Sunburst at 2,880-86 feet.

Fulton Petroleum Co.'s No. 1 Blackfeet, SW NE NE, Section 28-36-12w, Milk River, is drilling at 2,010 feet.

Carbon County

Ohio Oil Co.'s No. 1 Montana Industrial, SE SW NE, Section 11-7s-21, Dry Creek, is bottomed at 5,581 feet and has recovered drill pipe with tester on bottom. It is running 9⅝-inch to bottom and will drill a little deeper and test. It is in the top of the Lakota and showing a little oil and gas, but in nothing like the quantity found in the discovery well in that formation one location to the south. Same company's No. 1 Souders, C SW SE, Section 2-7s-21, is drilling at 4,100 feet, and its No. 1 Chapman, C SW SW, Section 2-7-21, is drilling at 839 feet. The Carbon Oil & Gas Co.'s No. 1 Armstrong, SW cor. NW, Section 7-7s-22, is drilling at 2,650 feet.

Rosebud County

Prairie Oil & Gas Co.'s No. 1, Contract 4, SE SW SW, Section 28-11-39, Porcupine Dome, is bottomed at 1,360 feet and trying to sidetrack two joints of the 15½-inch casing, and its No. 1-X, Contract 3, NE SW NW, Section 26-10-39, is fishing for tools at a total depth of 2,415 feet.

Toole County

Oil Drillers, Ltd.'s No. 1 Farbo, NE SE SE, Section 3-37-4w, Border Field, is drilling at 1,850 feet with the 10-inch at 1,680 feet, and the Akalta Oil Co.'s No. 1 Farbo, SE cor. NE, Section 2-37-

(Continued on Page 97)

INTERESTS MERGED IN N. Y.-PENN FIELD MAY MEAN NEW PIPE LINE

CORNING, N. Y., June 27.—Gale H. Stalker, Elmira, president of the Tri-State Oil & Gas Corp. of Elmira, announced that his company and the Bigelow Gas Corp. of Rochester had purchased all of the Wayne gas field holdings of the Wittmer Oil & Gas Co. and Acme Drilling Co. of Pittsburgh, Pa. Leases on 7,000 acres of land, three producing wells and two drilling wells change hands today by the transaction, and considerable litigation between the Tri-State and Wittmer companies is brought to an end.

The merging of interests of the two companies it is generally believed will result in the construction of a pipe line north to Rochester, although Tri-State officials had no announcement to make other than stating the negotiations for a line were under way.

The Lycoming Natural Gas Co.'s line from the Tioga gas field to Syracuse will run northeast, passing this city near East Corning, running north of Big Flats, south of Ithaca to Syracuse. It is estimated that 110 miles of construction in the way of trench digging and line laying will be necessary to reach Syracuse. Lines to tie in the Tioga Field wells will probably be laid along with the first part of the main 20-inch line.

Western New York Field

Gas development along lines of drilling wells increases in the Millgrave district, southeast of Olean where three small producers have been brought in. The drilling now under way will result in more producers in that area.

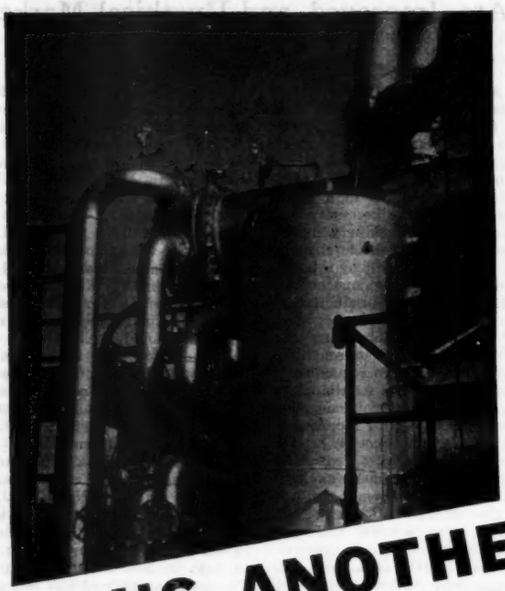
Contractor J. J. Boyle, Bradford, Pa., has drilled two on the Willover farm. One well is yielding 650,000 feet daily and the other 500,000. Contractor M. J. Sutley, Rixford, Pa., has drilled a well on the Green farm that has an initial production of 200,000 feet daily. Contractor Boyle is now moving his rig to the Barnes farm, nearby, and Contractor Sutley will drill on the Lewis Vaughn farm next.

The Producers Gas Co., with headquarters in Olean, has built a 2-inch line from Portville to the field, 3 miles, for the buying of the production. The output of the territory will amply take care of any shortage of gas experienced in this part in the past in the winter time, it is believed.

Residents of the Millgrove section are looking forward to a lively boom, and practically every piece of property in the section has been tied up by lease, according to report. Work has been speeded up by Contractor Boyle, who is now working his drillers on two tours, while Sutley is remaining on one for the present.

The Allegany Gas Co., which opened the Tioga gas field, brought in its fourth gas-producing well in that field in its No. 1 Manning in Farmington Township, Tioga County, Pennsylvania. It started off at 10,500,000 feet a day. The total depth of the well was 4,120 feet.

The Tri-State Oil & Gas Co.'s No. 1 Methodist Church lot, in the Wayne, N. Y., district, was good for 1,500,000 feet of gas from Oriskany sand at a depth of 1,732 feet.



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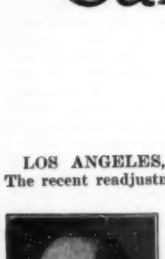
California Outlook Is Still Uncertain

Existing Prices Cannot Be Maintained Unless Fundamental Conditions Are Improved and Unethical Marketing Ceases

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., June 27.—The recent readjustment in crude and refined oil prices on the Pacific Coast has softened the pessimistic outlook in this area but this constructive policy has not caused any great wave of optimism to pervade the local atmosphere. There is a decided air of uncertainty apparent and the outlook is not at all encouraging for an indefinite continuance of the existing price structure. L. P. St. Clair, president of the Union Oil Co. of California, in an address delivered at the City Club in Los Angeles attended by prominent bankers, business men and industrial leaders, stated that existing prices cannot possibly be maintained unless fundamental conditions are improved and unethical marketing practices eliminated. In condemning price cutting and unethical conduct, Mr. St. Clair called attention to the fact that when gasoline was selling in the city of Los Angeles for 20½ cents per gallon, marketing expense and the state gasoline tax comprised 60 per cent of the total. During the recent gasoline war the selling expense and state tax totaled 110 per cent, or, in other words, 10 per cent more than the total retail price. In his usual vigorous manner, he condemned the practice of trying to build up gasoline gallonage at a loss instead of selling a smaller quantity and banking a profit.



Resolution Adopted

The meeting addressed by Mr. St. Clair was sponsored by Victor Rossetti, president of the Farmers and Merchants Bank; John G. Bullock, president of Bullock's, Inc.; Allen C. Balch, James R. Martin, Paul S. Armstrong and Reeve Gartzman, prominent merchants, industrial leaders and bankers. At the conclusion of this meeting held in Los Angeles on June 25 the following resolution was unanimously passed:

"While every gas war appears to mean a few cents saved to the motorists, conditions which have prevailed in this community during the past four months have developed a situation which, apart from its effect on the oil industry, requires thought and action from the owners and employes of every business in southern California. Oil is the largest basic industry in the State of California. Directly or indirectly the prosperity of the great majority of our people is dependent upon it. During the past four months the buying power of this industry (under normal conditions it produces an annual revenue exceeding $800,000,000) has been cut in half. The bad effects of this shrinkage have not been confined to the oil industry or to those businesses which sell directly to it. On the contrary, they have reached and spread from one business to another and then another, resulting in a condition of reduced employment and decreased purchasing power in all industries which has affected the welfare of the entire State. The loss to the people and business in Los Angeles County has been particularly severe. Recognizing that in California as a whole and in Los Angeles city and county in particular all phases of labor and business are vitally affected by the ability of the oil industry, from the producer of crude on through to the individual service station operator, to operate at a reasonable margin of profit, we adopt this declaration approving the recent effort of the industry toward price stabilization. And, further, recognizing the evil consequences which would follow a recurrence of recent conditions, we pledge ourselves and strongly urge organized bodies of citizens to join us in a movement to help maintain the necessary balance in our industrial machinery by refusing to encourage or patronize any elements which seek to disturb it by a policy of price cutting or other uneconomic practices, which have been productive of such distress and disaster."

The chief difficulty confronting the California oil industry at the present time is the failure of producers to reduce state production to the allowable maximum of 487,500 bbls. per day. Uneconomic marketing practices are also vital factors but the principal cause of concern at the present time is the failure of operators to effect the necessary curtailment as indicated by the recent economic survey. State production of crude oil has not yet been reduced to even 500,000 bbls. per day and since the present excess approximates more than 25,000 bbls. per day, Umpires Grimm and Anderson sent out a flood of telegrams to operators in various fields informing them that the existing crude oil price structure and the curtailment program as a whole was being endangered by their failure to meet curtailment obligations.

Kettleman Hills

The Kettleman Hills Field of Kings County continued to monopolize the spotlight and will undoubtedly retain this distinction for some time to come. During the past week the Standard Oil Co. finished another new well and this project, No. 47-35J, came in under a natural flow doing 9,490 bbls. of clean 35.1 gravity oil and 11,000,000 feet of natural gas per day from the deep Ochsner zone at 8,234 feet. This new well, finished with a 6⅝-inch combination string carrying 839 feet of perforated and cemented through perforations at 7,384 feet, is the eighth well to be completed by the Standard Oil Co. in the North Dome. In addition to completing No. 47-35J, the Standard killed three producers in this field as its contribution toward the existing statewide curtailment program. The wells taken off production this week by the Standard were No. 21-33J, flowing 6,830 bbls. per day; No. 32-3P, flowing 985 bbls. daily, and No. 21-7Q, flowing 4,695 bbls. This represents an actual reduction in production of 12,510 bbls. per day. No. 21-33J was completed by the Standard in May, 1931, flowing 14,000 bbls. per day from 7,952 feet.

The Union Oil Co. has just concluded drilling operations on No. 1 Amerada King, offsetting No. 1 Huffman of the Superior, and this potential producer should be tanking oil along about July 1, 1931. Liner has already been run in and with final preparations under way the well should be hooked up and ready for production some time during the first of July. The Union's new well, which is being drilled in conjunction with the Amerada Petroleum, was bottomed at 8,310 feet. The Superior Oil Co., as was expected, pinched back No. 1 Huffman and opened up No. 2 Huffman in order to prevent excess channelling by the Standard Oil Co.'s No. 85-29J, a recent completion. The Superior is believed to have broken all existing drilling records in the North Dome by making 6,000 feet of hole in No. 3 Huffman in 48 days. This is an average of 125 feet of hole per day. This drilling record is no doubt due in a large extent to the use of a 174-foot steel rig which enables the crew to pull three doubles or 132 feet of drill pipe.

The Kettleman North Dome Association is making preparations to finish No. 23-1P, a new well in this area, and it should be on production some time within 10 days as a combination string is being set. This potential producer is expected to be followed into production within a short time by the association's No. 8-28J. In addition to completing drilling operations on these wells, the association staked two new locations within the past week. One of these is of unusual interest because this well, No. 58-20J, will be the most westerly well in the North Dome. This project will offset the Superior Oil Co.'s Huffman lease, which is just south of the association's property to be explored in Section 20-21-17. The association's No. 52-2P, the second location staked this week, will offset the property line of the Felix lease operated by the Petroleum Securities.

Mountain View

The Shell Oil Co. recompleted No. 1 Porter Day, the discovery well in the Weed Patch, or Mountain View Field of Kern County, flowing 540 bbls. of 25.1 gravity oil per day from 7,926 feet, the hole having been plugged back from 8,419 feet, following the failure to develop commercial production at the latter depth. This well subsequently sanded up, and the company is cleaning out to bottom, after which a liner will be run in and the well completed in as good mechanical condition as possible. No. 1 Duff, which is being drilled by the Osborn Colter interests on property subleased from the Shell, started flowing during a water shut-off test from 3,814 feet early in the week but subsequently sanded up. The output from this well, which is open from 520 feet to bottom at 3,814 feet, was cutting approximately 75 per cent and it may be several weeks before a conclusive test is made as it may be necessary to plug and test by stages to exclude water entering the hole.

The Golden Bear Oil Co. successfully completed its second producer in the Round Mountain Field of Kern County when No. 6 in Section 6-28-29 was brought in producing 225 bbls. of 15.9 gravity oil cutting 4 per cent from 1,690 feet. Drilling operations in the Round Mountain Field have been negligible for several months, and, while it is the present intention of the Golden Bear Oil Co. to keep one string of tools in operation, this may not be possible because of the limited market and difficulty in disposing of production. The Round Mountain Field, with an allowable production of 1,200 bbls. per day, is producing only 485 bbls. daily. The Mount Poso Field, with an allowable daily production of 8,900 bbls., is also producing below its quota.

Midway-Sunset

The Chanslor-Canfield Midway Oil Co. completed No. 89, a new well in the Midway section of the Midway-Sunset Field in Section 8-32-23, but it was good for only 255 bbls. of 22.1 gravity oil per day from 2,976 feet, the hole having been finished with an 8⅝-inch oil string carrying 207 feet of perforated. There are only two other incompleted drilling projects under way in this field, the Birch Oil Co. having recently suspended operations on No. 2 Maricopa in Section 7-11-23, following the failure to develop deep commercial production at 9,000 feet. The Standard Oil Co. has been granted a six months' extension of its lease on the Mascot Oil Co.'s property in Section 26-32-23. Under the terms of this lease the Standard was obliged to resume development work on July 1, 1931, but under the extension just granted will not be obliged to resume work until January 1, 1932. The Standard acquired a lease on the Mascot property in 1929, following successful extension work of the Union Oil Co. around the edge of the Midway-Sunset Field. The success of the Union in developing commercial production stimulated deep drilling at that time and subsequently resulted in the drilling of several deep tests. The Shell tested out the Mount Diablo property without success and the Standard Oil Co. drilled No. 1 Mascot down to 9,629 feet, at which point operations were suspended. This well at one time held the record for deep drilling but its depth has been exceeded on several occasions since the suspension of work in April, 1930. The Standard did not conduct a production test on this well, although a string of 5¾-inch was landed at 9,302 feet previous to the suspension of work. This has led to the assumption that the Standard has found something more encouraging than generally reported.

Lost Hills-Belridge

The Getty Oil Co. tested out approxi-

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Crude oil	.....	.....	.....	.....	.....	68,690
Fuel oil	.....	.....	.....	.....	.....	71,950
Diesel and gas oil	.....	.....	.....	.....	392,230	1,919,152
Gasoline	516,975	73,854	129,529	18,504	7,164,725	8,416,609
Kerosene	47,597	6,800	.....	.....	89,109	.....
Coastwise—						
Crude oil	500,560	71,509	380,101	54,300	10,365,944	7,245,235
Fuel oil	172,283	24,612	73,549	10,507	6,435,849	8,236,300
Diesel and gas oil	16,459	2,351	.....	.....	771,816	870,283
Gasoline	359,826	51,404	135,546	19,364	6,443,059	5,563,257
Kerosene	5,007	715	.....	.....	169,449	71,497
Naphtha distillate	.....	.....	.....	.....	4,952	.....
Exports—						
Crude oil	165,445	23,635	234,057	33,437	3,444,941	3,125,348
Fuel oil	231,744	33,106	206,609	29,514	7,118,755	8,937,825
Diesel and gas oil	.....	.....	113,903	16,272	1,824,250	2,322,994
Gasoline	.....	.....	52,864	7,552	4,446,655	7,423,264
Kerosene	.....	.....	.....	.....	784,456	1,845,431
Lubricants	.....	.....	.....	.....	18,978	10,082

TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC AND GULF PORTS

Diesel and gas oil	.....	.....	.....	.....	.....	88,280
Gasoline	.....	.....	66,750	9,536	405,469	641,680
Lubricants	.....	.....	7,975	1,139	21,990	5,866
Coastwise—						
Fuel oil	118,610	16,944	83,238	11,891	2,042,437	1,815,106
Diesel and gas oil	34,940	4,991	.....	.....	195,112	152,544
Gasoline	194,911	27,844	76,977	10,997	1,512,623	1,930,245
Kerosene	6,480	926	8,072	1,153	136,990	119,387
Naphtha distillate	.....	.....	.....	.....	49,780	.....
Exports—						
Crude oil	.....	.....	30,180	4,311	107,736	3,075
Fuel oil	69,005	9,858	.....	.....	707,851	481,000
Diesel and gas oil	49,350	7,050	.....	.....	294,708	231,990
Gasoline	.....	.....	65,594	9,371	1,939,628	1,946,896
Kerosene	.....	.....	11,790	1,684	429,002	369,514
Lubricants	.....	.....	.....	.....	.....	18,672
Naphtha distillate	.....	.....	.....	.....	20,100	.....

mately 100 feet of a rather promising oil sand in No. 1-A Lincoln, a Temblor test in the Lost Hills Field of Kern County, but the result was unsatisfactory. This well, in Section 12-26-20, in the extreme northern part of the Lost Hills Field, effected a satisfactory water shut-off at 4,077 feet, but water subsequently broke in with the result that the company will be obliged to recement the 6⅝-inch water string before the underlying oil sand can be successfully tested out. The Universal Consolidated, a subsidiary of the Richfield Oil Co., recemented No. 49 in Section 32-26-21 and is retesting the water shut-off at 5,550 feet.

The Reward Oil Co., a subsidiary of the Associated, has beaned back its No. 4, a recent completion in Section 34-27-20 at North Belridge, from 8,768 bbls. to 2,240 bbls. per day. This well, the largest completion finished in the North Belridge Field, is flowing under a tubing pressure of 400 pounds and a casinghead pressure of 1,020 pounds. The Belridge Oil Co., discoverer of deep Temblor production in the North Belridge Field, is making preparations to complete No. 64, a new well in Section 27-27-20. The outcome of work on this projected test will be watched with considerable interest because this is the highest well structurally in the North Belridge Field, the top of the Temblor having been picked up at 4,931 feet. This company is also making preparations to resume work on No. 48 in Section 35-27-20, an offset to the Continental Oil Co.'s No. 2 Result, which is scheduled to be given a production test within the next 10 days. The Standard Oil Co. got a wet job on No. 2 McPhail and will consequently be obliged to recement the 11¾-inch landed at 5,470 feet. This well failed to show any semblance of a kick following swabbing operations of several days' duration.

Santa Barbara Mesa

Charles Starke's No. 1 Nye in the Mesa Field of Santa Barbara County flowed for several hours at the rate of 250 bbls. per day on a production test following completion at 2,114 feet, but subsequently declined and was shut in pending installation of pumping equipment. This well, finished with a string of 6⅝-inch landed and cemented at 2,037 feet and a 4¾-inch liner including 77 feet of perforated, will probably be good for about 200 bbls. per day on the beam. The Irvine Oil Co. failed to secure commercial production but will continue work and attempt to secure production around the 1,900-foot level. This well topped the Sespe at 2,040 feet and has been plugged back to 1,970 feet. The Pacific Western Oil Co. made a preliminary production test on No. 8, a tideland well located on permit No. 92, but subsequently killed it and will drill ahead. This new well, finished at 3,418 feet, produced 1,030 bbls. of 28.6 gravity oil and 8,000,000 feet of natural gas during the preliminary test conducted early this week. The Barnsdall and Rio Grande are reaming No. 1 Bishop-Evans preliminary to testing the Sespe in this well, which has been bottomed at 6,038 feet. The Pacific Western's No. 8 and No. 1 Bishop-Evans of the Barnsdall and Rio Grande are the only wells actually drilling in the Elwood Field of Santa Barbara County.

The General Petroleum is vigorously planning a substantial curtailment in all drilling operations and tentative plans call for the discontinuance of drilling operations on five wells within 10 days. The company is running 14 strings of tools in California but will have only nine incompleted drilling wells under way after July 1, 1931. In the Rincon Field of Santa Barbara County, the General Petroleum will be able to reduce drilling operations by finishing No. 3 Ferguson and No. 2 Needham, two tideland projects, both of which are scheduled for completion within the next week. In the Capitan Field of Santa Barbara County, the General Petroleum conducted a flow test on No. 10 Erburu at 2,669 feet, and, while this well showed a potentiality of 4,000,000 feet of natural gas per day, it did not make any oil. Drilling operations are accordingly being resumed and the hole will be carried on down as a deep test. The Oakburn Oil Co. has not yet succeeded in capping No. 1 Sperry, a tideland drilling project on permit No. 169, which has been flowing approximately 5,000 bbls. of salt water per day for several weeks from 2,821 feet. The Prairie Oil & Gas Co. has quitclaimed its 2,000-acre Sexton lease east of the Ventura Avenue Field and has left the hole open so that it may be subjected to further prospecting in the event anyone else wishes to give it a further test. The first hole drilled on the Sexton lease was drilled by the Milham Exploration Co. and subsequently abandoned at 7,200 feet. The Federal Oil Co. then took over the property and drilled a test to 4,500 feet. After the Federal pulled out, the Prairie interests took over the unfinished hole and carried it down to 7,700 feet, at which point it is being abandoned.

Long Beach

The Long Beach Field of Los Angeles Basin passed its tenth birthday in a rather uneventful manner from a drilling standpoint as there was not a single well tested on its natal day. The initial completion in this field, No. 1 Alamitos of the Shell Oil Co., was finished on June 25, 1921, doing 700 bbls. per day from 3,114 feet. In the decade since completion of the first well, Long Beach has produced 433,404,871 bbls. up to the close of April, 1931. Curtailment of drilling operations and completion of development work has been reflected in fewer completions. The Shell Oil Co. is abandoning No. 3 Childs in the Dominguez Field of Los Angeles Basin following the failure to develop commercial production at 7,643 feet, and further work in this district will be restricted for the present. The Union Oil Co. has staked location for No. 63 Bell, a new well to be drilled in the Santa Fe Springs Field upon completion of No. 62, which is expected to be on production within the next two or three days.

The Standard Oil Co.'s No. 1 Bolsa Chica, discovery well in the Huntington Beach Field of Los Angeles Basin, started flowing several days ago after the sucker rods were pulled out of the hole. This well, which has produced approximately 2,500,000 bbls. of oil, has been on the beam for several years, although it has showed erratic tendencies from time to time. This well has alternately pumped and flowed on several occasions. W. E. McCaslin's No. 17 Transport, a deep test being drilled in the town lot section of the Huntington Beach Field, is still in the hard fine gray oil sand at 7,915 feet, and since considerable gas pressure is in evidence the projected test to be made on this well will be watched with considerable interest. The Superior Oil Co. has resumed drilling in No. 2-7 Gillette, following the coring of this sand by McCaslin and several other wells will be started if and when McCaslin's No. 17 Transport is completed. The Standard Oil Co. successfully completed No. 66 on Los Angeles Investment Lease No. 1 in the Inglewood Field of Los Angeles Basin early in the week and this new well is doing 348 bbls. of 21.6 gravity oil per day from 2,627 feet, the hole having been finished with an 8⅝-inch oil string carrying 1,258 feet of perforated. In the Potrero Field, Wilcox & Schirm finished No. 1 Castleberry flowing 406 bbls. of unusually clean 39.6 gravity oil per day from 5,418 feet. This well was finished by Clyde Bell. The Wilshire Annex Oil Co.'s No. 1 Potrero Country Club, a recent completion in the Potrero Field, is holding up in good shape, present production approximating 1,205 bbls. per day. In the Newport Field, a few miles south of Huntington Beach, T. F. Gesell put his No. 1 Newport on a pumping test at 1,607 feet after landing a 4-inch liner including 15 feet of perforated, and got a 25-bbl. pumper, the oil testing 15.1° and showing a cut of 5 per cent.

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Olympic Realty Corp., No. 1 Barnes, Los Angeles Co.	14- 2-15	6,078	suspended
Hines Pet., No. 1 Ocean Park, Los Angeles Co.	9- 2-15	6,510	cleaning out
Taylor Oil Co., No. 1 Culver, Los Angeles Co.	12- 2-15	6,238	suspended
Mesmer City Corp., No. 1 Mesmer, Los Angeles Co.	24- 2-16	6,475	sd. sh. drilling
Dwyer & Becker, No. 1 Compton, Los Angeles Co.	17- 3-13	4,520	suspended
Allison Synd., No. 1 Baldwin, Los Angeles Co.	8- 2-14	5,110	suspended
Cal. Ventura Oil Co., No. 1 Manhattan, Los Angeles Co.	30- 3-14	6,535	suspended
Cal. Ventura Oil Co., No. 1 Hermosa, Los Angeles Co.	31- 3-14	3,396	suspended
Cal. Ventura Oil Co., No. 2 Hermosa, Los Angeles Co.	31- 3-14	3,300	suspended
Cal. Oilfields Corp., No. 1 Hermosa, Los Angeles Co.	31- 3-14	2,560	suspended
Carniel Oil Corp., No. 1 Hermosa, Los Angeles Co.	31- 3-14	3,114	suspended
Hermosa Expl. Co., No. 1 Hermosa, Los Angeles Co.	31- 3-14	3,050	75 bbls. daily
Tulsa Oil Co., No. 1 Hermosa, Los Angeles Co.	6- 4-14	3,060	testing
McMahon & McDonald, No. 1 Watts, Los Angeles Co.	12- 3-14	4,665	suspended
Thorpe Pet. Co., No. 1 Hawthorne, Los Angeles Co.	10- 3-14	3,745	suspended
Alendra Oil Co., No. 1 Hawthorne, Los Angeles Co.	23- 3-14	rig	rigging up
Staple Oil Co., No. 1 Manhattan, Los Angeles Co.	24- 3-15	2,700	sd. sh. drilling
Pacific Shore Oil Co., No. 1 Lawndale, Los Angeles Co.	20- 3-14	mtl.	building rig
York & Smullin, No. 1 Watson, Los Angeles Co.	29- 4-13	4,735	plug 4,310 ft.
Wilmington Consd., No. 1 Watson, Los Angeles Co.	17- 4-13	1,012	suspended
Pedro Pet. Corp., No. 1 San Pedro, Los Angeles Co.	14- 5-14	....	location
Brubaker, W. O., No. 1 Van Nuys, Los Angeles Co.	11- 2-15	2,700	suspended
Rucker & Croul, No. 2 Puente, Los Angeles Co.	27- 2-10	2,200	suspended
Arden Oil Co., No. 1 Puente, Los Angeles Co.	15- 2-10	3,325	suspended
D. & B. Oil Co., No. 1 Puente, Los Angeles Co.	3- 2-10	4,620	suspended
El Dorado Oil Co., No. 1 Puente, Los Angeles Co.	30- 2- 9	1,320	sd. sh. drilling
Marcel Pet., No. 1 Puente, Los Angeles Co.	31- 2- 8	3,100	suspended
Cudahy Oil Co., No. 1 Bell, Los Angeles Co.	20- 2-12	1,370	suspended
The Texas Company, No. 1 Montebello, Los Angeles Co.	4- 2-12	4,410	hd. sd. drilling
Blinn & Gray, No. 1 Montebello, Los Angeles Co.	6- 2-11	4,344	rig to deepen
Waist Oil Co., No. 1 Montebello, Los Angeles Co.	34- 1-11	4,842	rebuild rig
Yellowstone Oil Co., No. 1 Alhambra, Los Angeles Co.	24- 1-13	3,412	cleaning out
Yellowstone Oil Co., No. 2 Alhambra, Los Angeles Co.	19- 1-12	rig	rigging up
Los Gatos Oil Co., No. 1 El Monte, Los Angeles Co.	16- 1-11	2,280	suspended
Rucker, L. W., No. 1 Calabasas, Los Angeles Co.	26- 1-17	753	set pipe
Olympic Corp., No. 1 Calabasas, Los Angeles Co.	18- 1-17	5,960	suspended
Nessa Pet., No. 1 Newport, Orange Co.	21- 6-10	4,910	suspended
Hall, H. L., No. 1 Newport, Orange Co.	20- 6-10	790	suspended
Gesell, T. F., No. 1 Newport, Orange Co.	29- 6-10	1,470	pump 25 B./D.
Standard, No. 1 Newport, Orange Co.	26- 6-10	5,100	hd. sd. drilling
Western Gulf, No. 1 Santa Ana, Orange Co.	12- 3- 8	3,267	suspended
Gieck Oil Co., No. 1 Sunset Beach, Orange Co.	20- 5-11	4,911	br. sh. drilling
Beck, F. A., No. 1 Corona, Riverside Co.	8- 4- 6	490	sd. sh. drilling
Beck, F. A., No. 1 Beaumont, Riverside Co.	1- 3- 1	520	sd. sh. drilling
Grey, H. H., No. 1 Redlands, San Bernardino Co.	25- 1- 2	2,392	suspended
Borderland Oil Co., No. 1 Encinitas, San Diego Co.	12-13- 4	2,519	suspended
Borderland Oil Co., No. 1 Point Loma, San Diego Co.	30-16- 3	4,975	hd. sd. drilling
South Bay Oil Co., No. 1 Border, San Diego Co.	31-18- 2	...	material
Carr, O. K., No. 1 Capistrano, San Diego Co.	13- 8- 8	5,250	suspended

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Western Gulf, No. 1 Santa Maria, Santa Barbara Co.	5- 9-35	6,760	reaming
Barnsdall, No. 1 Gato Ridge, Santa Barbara Co.	9- 8-32	6,510	cleaning out
Midwest Oil Co., No. 1 Los Alamos, Santa Barbara Co.	2- 7-33	2,790	sd. sh. drilling
Smith, W. E., No. 1 Lompoc, Santa Barbara Co.	18- 7-34	100	suspended
Zaca Oil Co., No. 1 Los Olivas, Santa Barbara Co.	20- 7-31	rig	rigging up
General Pet., No. 1 Goleta, Santa Barbara Co.	21- 4-28	4,533	gas—shut in
General Pet., No. 2 Goleta, Santa Barbara Co.	21- 4-28	4,350	gas—shut in
General Pet., No. 3 Goleta, Santa Barbara Co.	21- 4-28	5,375	Sespe form.
General Pet., No. 133 Goleta, Santa Barbara Co.	21- 4-28	2,030	suspended
General Pet., No. 134 Goleta, Santa Barbara Co.	21- 4-28	2,053	suspended
General Pet., No. 136 Goleta, Santa Barbara Co.	21- 4-28	2,047	suspended
General Pet., No. 137 Goleta, Santa Barbara Co.	21- 4-28	2,050	suspended
General Pet., No. 138 Goleta, Santa Barbara Co.	21- 4-28	4,931	suspended
General Pet., No. 139 Goleta, Santa Barbara Co.	21- 4-28	2,051	suspended
Boles Oil Co., No. 140 Goleta, Santa Barbara Co.	22- 4-28	1,040	suspended
U. S. Pet., No. 141 Goleta, Santa Barbara Co.	20- 4-28	1,035	suspended
U. S. Pet., No. 142 Goleta, Santa Barbara Co.	20- 4-28	2,012	suspended
U. S. Pet., No. 143 Goleta, Santa Barbara Co.	20- 4-28	1,019	suspended
El Camino, No. 149 Goleta, Tideland, Santa Barbara Co.	22- 4-28	1,035	suspended
Bolsa Chica, No. 191 Goleta, Santa Barbara Co.	24- 4-29	4,191	suspended
Bellview Oil Co., No. 159 Goleta, Santa Barbara Co.	24- 4-29	2,099	suspended
Cochran, J. H., No. 1 Naples, Santa Barbara Co.	7- 4-29	5,134	cleaning out
Johnson, George, No. 1-A Goleta, Santa Barbara Co.	19- 4-27	3,780	Sespe form.
Sovereign Oil Co., No. 1 Guadalupe, Santa Barbara Co.	20-10-35	5,500	redrilling
Pacific Western, No. 1 Gibraltar, Santa Barbara Co.	14- 5-27	2,345	suspended
Associated, No. 1 Rincon Creek, Ventura Co.	19- 4-24	2,080	suspended
C.C.M.O. Co., No. 2-A Rincon, Ventura Co.	23- 3-24	10,030	testing
Continental, No. 1 Rincon, Ventura Co.	23- 3-24	4,860	sd. sh. drilling
Pure Oil Co., No. 1 S. P. Canyon, Ventura Co.	15- 4-21	2,591	suspended
Superior Oil Co., No. 1 Sespe, Ventura Co.	14- 4-21	7,060	cleaning out
San Pedro Oil Co., No. 2 Sespe, Ventura Co.	13- 4-21	3,410	cleaning out
Mags Synd., No. 1 Oxnard, Ventura Co.	17- 1-21	4,910	suspended
Mex Cal Oil Co., No. 1 Conejo, Ventura Co.	12- 1-20	188	suspended
Hansen Pet., No. 1 Conejo, Ventura Co.	24- 1-20	330	suspended
Wilshire Oil Co., No. 1-A Buttonwillow, Kern Co.	7-29-24	7,000	recemented
Kent & McDonald, No. 1 Temblor Hills, Kern Co.	3-32-22	1,702	cemented
Calif. Oil Producers, No. 1 McKittrick, Kern Co.	30-30-22	935	sd. sh. drilling
Federal Drlg. Co., No. 1 Buena Vista, Kern Co.	20-31-24	5,367	suspended
General Pet., No. 1 Belridge, Kern Co.	30-28-21	5,200	br. sh. drilling
The Texas Company, No. 1 Belridge, Kern Co.	22-27-20	5,045	suspended
Standard, No. 2 Belridge, Kern Co.	31-27-20	5,591	testing
Ohio Oil Co., No. 1 Belridge, Kern Co.	36-27-20	5,980	suspended
Continental, No. 1 Belridge, Kern Co.	36-27-20	5,253	cemented
Wallace, K. C., No. 1 Belridge, Kern Co.	32-29-21	4,222	cleaning out
Rio Cal. Pet., No. 1 Shale, Kern Co.	2-27-18	2,355	suspended
Wicker, Sy, No. 1 Arvin, Kern Co.	12-30-28	1,250	suspended
Shell, No. 1 Weed Patch, Kern Co.	29-30-29	5,872	plug. back
Shell, No. 2 Weed Patch, Kern Co.	29-30-29	6,410	suspended
Shell, No. 3 Weed Patch, Kern Co.	32-30-29	5,784	testing
Osborn, Colter, No. 1 Weed Patch, Kern Co.	15-30-29	3,815	wet
Mohawk Oil Co., No. 1 Weed Patch, Kern Co.	32-30-29	6,150	cleaning out
Mohawk Oil Co., No. 2 Weed Patch, Kern Co.	4-31-29	rig	suspended
Alpine Oil Co., No. 1 Weed Patch, Kern Co.	13-31-29	3,785	suspended
Standard, No. 1 Devils Den, Kern Co.	14-25-18	3,313	testing
Hannah, Tom, No. 1 Devils Den, Kern Co.	25-25-18	2,925	suspended
Cumberland Oil Co., No. 2 Devils Den, Kern Co.	21-26-18	rig	rigging up
Temblor Dev. Co., No. 1 Blackwell Corner, Kern Co.	14-26-19	1,030	sd. sh. drilling
E. J. Miley, No. 1 Blackwell Corner, Kern Co.	17-26-19	rig	suspended
Shell, No. 1 Semitropic, Kern Co.	17-27-23	9,700	plug 2,510 ft.
Moran & DeCamp, No. 1 Mojave, Kern Co.	26-10-14	750	suspended
Kendall Dev. Co., No. 1 Mojave, Kern Co.	27-11- 9	511	cleaning out
Meridan Oil Co., No. 1 Antelope, Kern Co.	11- 9-15	3,804	suspended
Ritchie, J. J., No. 1 Tejon, Kern Co.	33-11-19	6,025	suspended
Associated, No. 1 Jacalitos, Fresno Co.	22-21-15	5,540	sd. sh. drilling
Panorama Oil Co., No. 1 Carizzo, San Luis Obispo Co.	7-31-21	4,019	suspended
Tray El Oil Co., No. 1 Carizzo, San Luis Obispo Co.	7-32-22	2,030	suspended
Cities Service, No. 1 Creston, San Luis Obispo Co.	20-28-15	893	hd. sd. drilling
Paso Robles Synd., No. 1 Paso Robles, San Luis Obispo Co.	34-27-11	4,015	cleaning out
Latin Amer. Pet., No. 1 Shandon, San Luis Obispo Co.	21-27-15	4,615	recemented
Schilling, C., No. 1 Atascadero, San Luis Obispo Co.	24-28-12	1,220	sd. sh. drilling
Schockley, C., No. 1 Pismo, San Luis Obispo Co.	13-32-13	3,094	suspended
Jergina, A. T., No. 1 Arroyo Grande, San Luis Obispo Co.	6-32-13	rig	suspended
Pacific Inland, well No. 1, Monterey Co.	19-23-15	1,340	hd. sd. drilling
Irma Investment Co., No. 1 Dudley Ridge, Kings Co.	7-23-20	1,345	gas well—idle
O'Donnell, J. E., No. 1 Dudley Ridge, Kings Co.	7-23-20	1,635	gas well—idle
Eagle Oil Co., No. 1 Dudley Ridge, Kings Co.	15-23-20	mtl.	building rig
Kettleman Lakeview, No. 1-A Dudley Ridge, Kings Co.	20-23-20	rig	rebuilding rig
Purman, T. H., No. 1 Reef Ridge, Kings Co.	36-23-17	3,320	br. sh. drilling
Seymour, L. W., No. 1 Avenal, Kings Co.	10-23-16	1,148	cleaning out
Twin State Oil Co., No. 1 Point Arena, Mendocino Co.	14-12-17	6,750	sd. sh. drilling
Orinda Pet., well No. 1, Contra Costa Co.	32- 1- 3	2,012	cleaning out
Ducor Pet. Co., No. 1 Ducor, Tulare Co.	14-24-27	2,180	cleaning out
Inland Valley Oil Co., No. 1 Visalia, Tulare Co.	24-17-24	2,092	suspended
Ellis & Stanford, No. 1 Tulare Lake, Tulare Co.	20-24-23	1,006	sd. sh. drilling
Colusa Oil Co., No. 1 Bush, Colusa Co.	31-15- 4	930	hd. sd. drilling
Oakdale Oil Co., No. 1 Oakdale, Stanislaus Co.	3- 2-10	4,170	hd. sd. drilling
Orland Oil Synd., No. 1 Orland, Tehama Co.	31-23- 3	2,520	redrilling
Sargent Oil Co., No. 1 Sargent, Santa Clara Co.	1-12- 3	rig	suspended

Pipe Line Construction News

TWO LARGE PIPE ORDERS PLACED FOR NEW LINES

PITTSBURGH, Pa., June 29.—Two large orders have enlivened the line pipe market. Youngstown Sheet & Tube Co. has received an order for about 200 miles of 26-inch electric weld for a gas line, about 41,000 tons, for delivery through to September 1 to Missouri Valley Pipe Line Co. for a line from Mullinsville, Kans., to Clifton. The order falls among the largest ever placed for line pipe and without any other business would give nearly full engagement to the company's electric weld department completed the latter part of last year and operated more or less since then.

Jones & Laughlin Steel Corp. has booked an order from the Shell Oil Corp. for about 200 miles of 10¾-inch O.D. seamless line pipe, about 17,000 tons, for an oil line.

These two orders, reported in a single week, represent between 5 and 10 per cent of the total tonnage of line pipe placed last year, and yet last year was record high in line pipe business.

Demand for standard or merchant pipe has been showing small gains almost every week for some time past and is now moving fairly well relative to finished steel products in general. Consumption is in a wide variety of ways. Prices are reported very steady all along the line.

The whole steel market has taken on a more promising appearance since President Hoover's moratorium announcement. There is much comment in the steel trade on what a remarkable change throughout the world that followed this announcement, a change not merely in sentiment but in actual market conditions. On the first business day after the news was known copper advanced $5 a ton to 8.25 cents a pound. There was the heaviest foreign buying of American copper in a single day for months, nearly 5,000 tons being taken. Silver advanced 2 cents an ounce, or 7½ per cent; tin advanced a cent a pound and the American Smelting & Refining Co. advanced its lead price $5 a ton, all in a single day. The common view is that the moratorium development will have a long range influence, which would suggest that the increase in steel demand that should come as a seasonal matter after the usual low July will be accentuated.

Steel ingot production last week was at about 37 per cent of capacity, representing a loss of 3 points in a fortnight. There may be a week or two of very low production, through some plants closing entirely for a week or two, but that would not be significant. A common view is that July will average not under about 35 per cent, this to be the low month, with gains beginning in August.

The finished steel price structure considered as a whole can hardly be regarded as having gained or lost in strength in the last two or three weeks. Merchant steel bars are now firmly established at 1.65 cents, Pittsburgh, as the open market, transactions being light as buyers quite generally had contracts at 1.60 cents, originally made for first quarter but extended from time to time. Nails are a trifle easier in that the $1.80 price prevalent for some time in sales to jobbers can now be done by consumers buying in carload lots. The current market in sheets is a shade easier but producers are strong in their efforts to secure advances on third quarter shipments on all lower priced business to be completed by July 31.

SHELL EAST TEXAS SURVEY

The Shell Pipe Line Co. has completed survey of its 10-inch line from East Texas to Houston and is now purchasing right of way for it.

TIOGA TO SYRACUSE LINE GETTING MARKETS

WELLSBORO, Pa., June 27.—Christy Payne, Jr., son of the president of the Lycoming Natural Gas Co. and other natural gas subsidiaries of the Standard Oil Co. of New Jersey, has taken up his residence in Syracuse, N. Y., the northern terminus of the projected natural gas line from the Tioga County gas field. Mr. Payne is in charge of the business of obtaining markets for the gas along the route. It is reported that large industrial plants in Syracuse, Ithaca and Cortland have been interviewed as prospective large customers.

Officials of the Lycoming company say they expect the line to be completed before the end of the year in spite of the setback occasioned by the necessity of changing the northern end of the route from Freeville, Tompkins County, to Syracuse.

The Lycoming Natural Gas Co., according to the latest field statistics, has a shutin production of approximately 100,000,000 feet per day and is drilling a number of wells to augment this.

TURNER VALLEY OIL MEN PLANNING GAS SYSTEM

By Victor Lauriston

CHATHAM, Ontario, June 27.—Independent oil companies operating in the Turner Valley Field are planning the organization of a company to handle and market their surplus natural gas production on a co-operative basis. Two conferences in reference to the project have already been held, and considerable progress made with the details. The new company, which is tentatively known as Western Canada Gas Producers, Ltd., is to be financed by the various independents and to market their gas to pipe line companies or other consumers on a prorata basis. Among the producers who took part in the early conferences are Model Oils, Ltd., New McDougall Segur Oil Co., Widney Petroleums, Ltd., Freehold Oil Corp., East Crest Oil Co., Okalta Oils, Commonwealth Petroleums, Richfield Petroleums, United Oils, Alberta Pacific Consolidated Oils, Wellington Oil & Gas Co., British Dominion Oil & Development Corp., Calmont Oils, Homestead Oils. These companies have an aggregate of 22 producing wells in the Turner Valley Field, but it is planned to extend the organization to include all the independent operators. The present project contemplates the sale of the gas to pipe line companies which will themselves take care of transmission; but the organization will secure charter powers to build and operate transmission and distributing systems. The organization is also expected to facilitate the utilization of natural gas by-products.

GREAT LAKES LINE STATION

CAMERON, Mo., June 27.—The Great Lakes Pipe Line Co. has been pumping gasoline through its pipes from Tulsa to Des Moines for about two weeks without any assistance from the big pumping station, which is being built on Highway No. 36, west of here. One of the large storage tanks was completed last week and a 2-inch pipe line was laid from Grindstone Creek to the station, 1½ miles distant, to pump water into this tank for testing. With 44 inches of water in the tank, which has a capacity of 30,000 bbls. the water gave out. Grindstone was dry. The workmen now are waiting for another rain for more water. The machinery in the main building and in the heating plant is placed and the station soon will be completed.

MISSOURI VALLEY LINE PROTESTS ASSESSMENTS

By Special Correspondent

OMAHA, Nebr., June 29.—The Missouri Valley Pipe Line Co. and the State of Nebraska are having trouble over the tax assessment of the pipe line property in this State. The State has placed a valuation of $15,000 per mile on a 24-inch pipe and the company is fighting this valuation and is charging that this rate is all out of proportion when compared with other kinds of property.

Executives of the company have just held a meeting in their headquarters in Omaha with officials from all over the system in attendance. President F. H. Brooks conducted the deliberations. General Counsel George A. Lee of Lincoln outlined the plans for the protest. L. E. Fischer of Chicago, vice president of operations of the Northern Natural Gas Co., was one of the officials attending.

The Missouri Valley pipe line serves 20 counties in Nebraska now. Assessors for these 20 counties got together and fixed the assessment at $18,000 per mile for a 24-inch pipe and a scale graduating downward for smaller pipe.

"The county assessors met in Lincoln three weeks ago and out of a clear sky placed this unconscionable appraisal upon us," Mr. Lee told the meeting. "We have to pay our first year's taxes out of capital, for we have as yet no earnings. The rate of $18,000 a mile for 24-inch pipe is equivalent to an appraisal of 80 per cent—a ratio not used on any other property."

Mr. Lee added that the Missouri Valley company has spent $10,000,000 in Nebraska and that if this method of appraisal holds good it will mean an appraised value of from $6,000,000 to $8,000,000 in Nebraska alone, or a tax expenditure of approximately $150,000 to $200,000 the first year, according to various levies.

Upon learning of the action of the county assessors, the Missouri Valley company immediately filed protests with the boards of equalization of the 20 counties. There was a tacit agreement, Mr. Lee said, that whatever was done by the Lancaster County board would be closely followed by the other counties. Lincoln, state capital, is county seat of Lancaster.

The Lancaster board met and reduced the appraisal by about $3,000 a mile on the 24-inch pipe, thus making the standard a little more than $15,000 a mile. The company regards this reduction as "something" but not enough.

Mr. Lee contrasted the Nebraska appraisal with that in Iowa, served by the same company on the same main line. He stated that the Iowa state board went on record as favoring the encouragement of the gas service and placed the valuation at $6,000 a mile on 24-inch pipe, with graduations downward.

"We want to pay our fair share of taxes," President Brooks says. "We are making no effort to evade or escape responsibilities along this line but we are hoping for a little co-operation until we 'arrive'."

Some of the more important cities in Nebraska served by this company are Seward, David City, Milford, Wilbur, Crete, Fairbury, Auburn and Wahoo. In a few days service will be opened to West Point, Tekemah and Oakland. Pipe lines will be built this year to Ashland, Weeping Water, Elmwood and Louisville. Altogether the company is serving 35 cities and towns in Nebraska.

The Missouri Valley company has just leased three entire floors of the City National Bank Building in Omaha for its headquarters. Seventy persons are employed in the Omaha headquarters and this number will soon be doubled. In addition, about 160 field men work out from Omaha.

SIXTY-MILE TIOGA LINE TO BE BUILT TO SOUTH

WELLSBORO, Pa., June 27.—Equipment for the 60-mile gas line south from the Tioga Field to Pennsylvania towns has been assembled along the route, and actual construction of the line will begin immediately.

The Susquehanna Gas Co., affiliated with the Pennsylvania Power & Light Co., will operate the line which will furnish gas to Williamsport, Muncy, Montoursville, Montgomery, Milton, Danville, Bloomsburg, Sunbury and other central Pennsylvania towns. The Pennsylvania Power & Light Co. has only one gas-producing well in the Tioga Field, but it has large lease holdings and until it produces enough for its own needs expects to tie up gas production of other producers not in the distributing business. The Phoenix Utility Co. is the general contractor.

The trenching job on this line will be a difficult one as the ditch will traverse a rough country part of the way, with plenty of solid rock to be blasted out. The pipe line will be electrically welded. It is said the line should be ready for operation some time in the fall.

PHOENIX BUYS PIPE

NEW YORK, June 29.—The Phoenix Utilities Co., construction subsidiary identified with Electric Bond & Share interests, has contracted with National Tube Co., controlled by United States Steel Corp., for 5,000 tons of 14-inch seamless tubing. The pipe involved in this order will be used in the construction of the natural gas pipe line in Montana by the Montana Power Co., another Electric Bond & Share affiliate.

MOUNT PLEASANT GAS LINE

MOUNT PLEASANT, MICH., June 27.—The Consumers Power Co. has started the construction of a gas line from Broomfield Township, Isabella County, to Mount Pleasant and Midland, which will mean close around 40 miles of pipe, the gas field in Broomfield Township being 12 miles west of Mount Pleasant.

ATLANTIC EAST TEXAS LINE

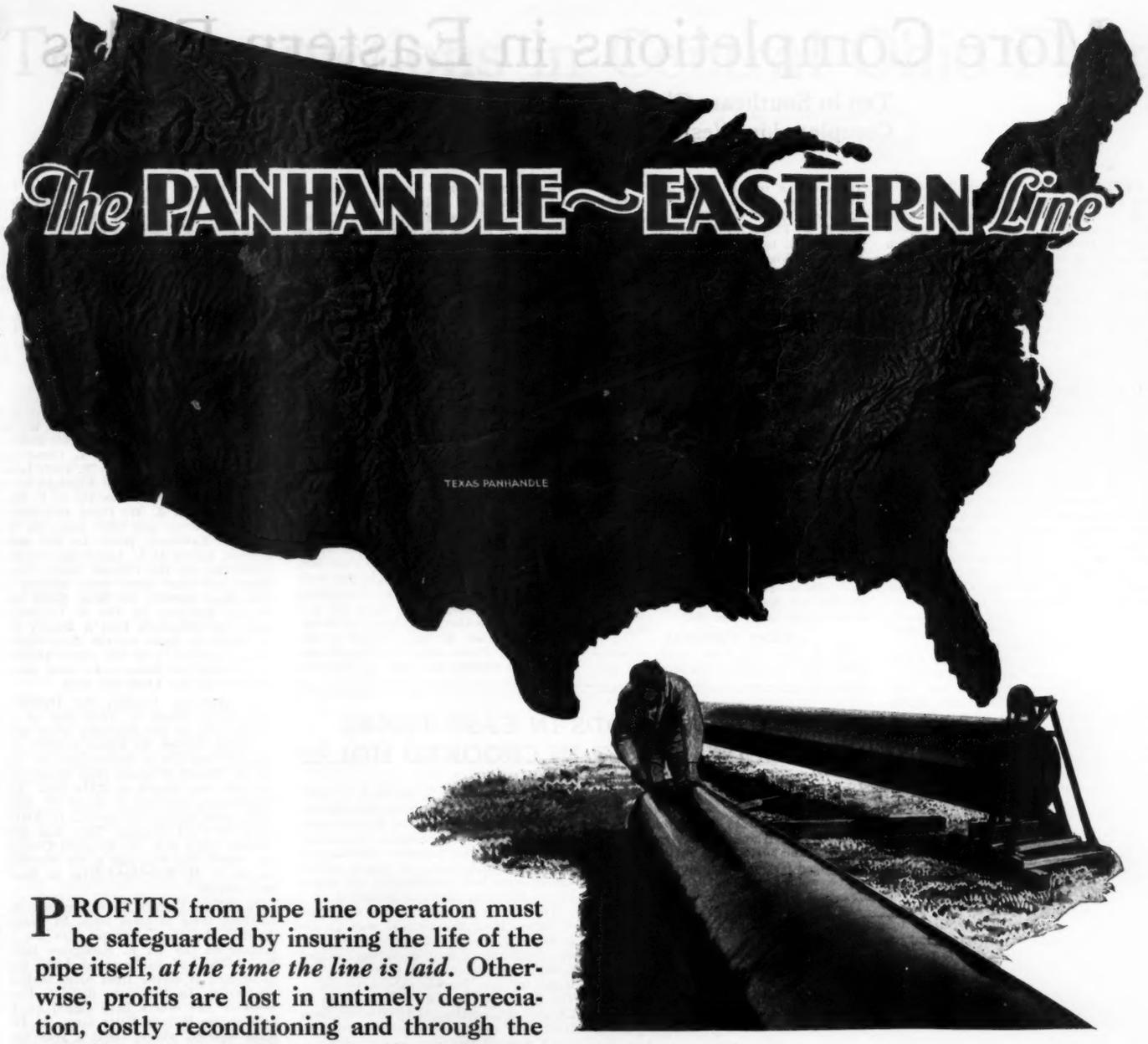
FORT WORTH, Tex., June 29.—The Atlantic Pipe Line Co. is starting immediately to lay many miles of gathering system in East Texas. It will lay a line to the coast later using the other line for outlet at present. The producing company is purchasing many leases and is on deal for others.

IRAK CONTRACTS PLACED

The Irak Petroleum Co. is reported to have placed orders for $13,650,000 worth of material required in the building of the Y-shaped pipe line which is to carry the oil from the Tigris to the Mediterranean. For the next four years work will be pushed, and it is hoped the first oil will be pumped to the seaports by 1935.

TENNESSEE FRANCHISE

KINGSTON, Tenn., June 27.—A franchise has been granted to lay pipe and operate in Kingston to furnish gas to the city to the Sunbright Gas & Oil Co. The pipe line will come to Kingston from the Morgan County gas fields by way of Harriman, and on the way to Lenoir City.



PROFITS from pipe line operation must be safeguarded by insuring the life of the pipe itself, *at the time the line is laid.* Otherwise, profits are lost in untimely depreciation, costly reconditioning and through the sacrifice of invaluable good will when service is interrupted to make repairs.

Responsible engineers, aware of these facts, provide *proven* protection for pipe lines. The great Panhandle-Eastern line, now nearing completion, will be protected *over 85% of its entire length* with ***Bitumastic Enamel,*** the time-tested coating which is safeguarding the life of *most* of the major natural gas lines.

"There is no substitute for experience."

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More Completions in Eastern Fields

Ten in Southeast Ohio, Two Fair Gas Wells. But Eight Completed in West Virginia. Four Oil Producers in Area

By Staff Correspondent

PITTSBURGH, Pa., June 29.—There was a slight increase in the number of wells completed during the past week and among them were three gassers rated at 1,000,000 feet or better. Eleven gas wells, 4 oil producers with an initial production of but 21 bbls., were brought in, and there were also three dry holes reported. One of the oil wells completed was not shot and is rated as a 10-bbl. pumper, which follows closely the present practice of bringing as little new production to the surface as possible. In normal times, after shot, this well would probably rate over 100 bbls. a day initial.

For the first time in many weeks as many as 10 wells were reported from southeast Ohio and, of these, two were very fair gassers. The Hocking Valley Drilling Co. and others completed the best well for the week in a test on the Frank Patton and Home Savings Co. lease in the SE Section 23, York Township, Athens County. It went in the Clinton sand at a depth of 3,340 feet and is showing for 2,000,000 feet a day. In the same township, but in the NE Section 17, the Chartiers Oil Co. also completed a fair gasser. It reached the Clinton sand at 3,436 feet on the Hocking Valley Products Co. lot and is rated good for 1,000,000 feet a day.

The best oil completion, though small in size, is the Atha Oil Co.'s No. 18 on the Melick Brothers tract in the NW Section 21, Madison Township, Perry County. It was drilled in the Clinton sand at a depth of 3,162 feet and tubed without shooting. It is estimated it will make a 10-bbl. pumper even in a tight sand.

Other completions were small in southeast Ohio. In Belmont County, the Union Gasoline & Oil Corp. drilled a second well on the Crawford Neff farm in the SW Section 7 in Mead Township. It is a gas well in the Big Lime at 1,414 feet and gauged 212,000 feet.

Medina County

Medina County reported two wells. At 407 feet in the shallow sands in Chatham Township, Curtis and Eaken completed a fair producer. It was their No. 5 on the Thomas Brown farm in Section 16, and after shot it produced 10 bbls. the first 24 hours. In the same section, E. R. Edson and Son Co. ran out their string of fair completions on the M. A. and Eva Franks farm with a dry hole. It was their No. 19 and drilled through the sands to a depth of 500 feet with no showing of oil.

In Muskingum County, the Ohio Fuel Supply Co. drilled a test on the Thomas Harrop farm, Section 5, Brush Creek Township, and it proved a very light gas well. It had a showing of 38,000 feet from the Clinton sand at 3,883 feet. In section 29 of the same township, the Fritz Oil & Gas Co. completed a test on the Swingle heirs farm. This well proved dry in the Clinton sand and to a total depth of 4,178 feet.

Herlan Schramm and others drilled No. 18 on the Ephriam Cummons farm in Section 33, Independence Township, Washington County. It is a small gasser gauging 75,000 feet from the second Cow Run sand and a depth of 675 feet. On the waters of Whipple Run, Fearing Township, of the same county, R. L. Wright tested the Frank C. Biehl farm, Lot 113. The well was completed in the Buell Run sand at a depth of 537 feet and will make about a half barrel pumper.

Drilling in Ohio

In southeast Ohio, in Muskingum County, the following work is noted: In Washington Township the Atha Oil Co. has reached 2,620 feet on the Fred Pollock farm in Section 12. In the same section the Ohio Fuel Gas Co. has a rig standing on the Fred Myers farm. In Section 3, Brush Creek Township, the Fritz Oil & Gas Co. has a test on the B. F. Floyd farm standing at 3,900 feet and on top of the Clinton sand. In Hopewell Township, M. F. Whitehill has a rig up on the Boyer farm in Section 6, and in Section 3, Clay Township, William Cline and others have not started drilling their test, for which a rig has been standing, on the Howard H. Doyle farm.

In Perry County, there are several rigs standing. In Section 5, Reading Township, Bauman and others have a rig standing on the Elmer Vansickle farm. In Jackson Township, W. G. Perrigo has rigged up for No. 6 on the J. A. and W. E. Donnelly farm. In Clayton Township, and Section 31, the Wehrle Co. has a rig standing on the Wolfe heirs farm.

In Licking County, the Wehrle Co. has started spudding on the joint lease of J. A. and A. J. Loughman and O. H. Hartman in Section 14, Hopewell Township. In Fallsbury Township, the center of a considerable pool, W. Rutledge and others have the timbers on the ground for No. 4 on the William D. Booth farm in Section 14.

WEST VIRGINIA

There were but eight wells reported from West Virginia. One small oil producer was included in the totals. In Clay district of Wirt County, and on the J. L. Showalter farm, Garrity and Burke Oil & Gas Co. cleaned out an old well which has been plugged for about three years and shot it. It is now producing at the rate of 1¼ bbls. a day.

In Calhoun County, there were three completions all in different districts. Of late, this county has been the most active, and the best well for the week in West Virginia is recorded here. In Center district, T. J. and A. H. Jackson drilled a test on the T. J. Jackson farm in the Salt sand at 1,848 feet and it proved a very fair gasser natural. It is rated at over 1,000,000 feet. The next largest well was also a Salt sand well and was the test of the Chemical Oil Co. on the Yoak and Fluhardy farm in Sheridan district. It went to a depth of 1,587 feet and will make a fair gasser. The third report from Calhoun County was the old No. 3 of F. F. McIntosh on the John I. McCoy farm in Lee district, drilled deeper from the Salt sand in the Injun sand and to a depth of 2,215 feet. It is showing for a very light gas well.

In Lincoln County, the Cambridge Gas Co. completed a very light gas well on the McCorkle heirs farm in Washington district. It was drilled in the Salt sand. There were two completions in Mingo County and both in Warfield district. Here, the United Fuel Gas Co. completed their No. 4,323 on the Central Trust Co. tract in the Brown shale at a depth of 3,828 feet and it is a small gas well, natural. On the same lease, the same operator completed No. 4,325 in the Big Lime at a depth of 2,046 feet and it is showing for about 200,000 feet a day.

In Pleasants County, on the waters of Willow Island Run, Dinsmoor & Co. drilled a fourth well on their George Leonard lease in McKim district. It proved dry in the Cow Run sand.

Drilling in West Virginia

In Ritchie County, C. B. Lewis and others have rigged up on the W. E. Baker farm in Murphy district and in the same section, Godfrey L. Cabot has made a location on the J. N. Eddy farm. In Grant district, H. E. Flanigan is in the sand at 1,680 feet on the C. F. Batton farm, and J. W. Deem and others have rigged up and shut down on the W. W. Lawrence farm. In the same district, Edwin D. C. Lynch has reached 1,900 feet on the Clinton Smith farm. There are three other wells drilling in this same district, the King Knob Gas Co. at 450 feet on the S. Carpenter farm, the Mountain Iron & Supply Co. at the same depth on the Ama Exline farm, and No. 5 of the Cairo Oil Co. on the Phillips Deem heirs farm which has reached the 1,000-foot level.

In Harrison County, the Delaware Gas Co. is down to 2,400 feet in its second test on the Reynolds heirs farm in Eagle district. In Union district, the Reserve Gas Co. is drilling its No. 157 on the Wesley Williams farm deeper and the hole now stands at 3,110 feet. The Washington Gas Co. is doing the same thing with its test on the E. D. Fittro farm in Coal district. This has now reached 2,374 feet. In Marshall County, the Myers Oil Co. has a rig standing on the C. M. Strickland farm in Sandhill district.

In Gilmer County, there are four operations, three of them tests. In Center district, the Hope Natural Gas Co. is drilling on the W. E. Snodgrass farm, No. 7,538, and has reached 1,653 feet in drilling it deeper from more shallow production. In the same district, Paul Weekley and others have rigged up to drill on the Belinda Fetty farm. In DeKalb district, where, about a year ago, some large gas wells were completed, McCall and others are building a rig for a third well on the John R. Ralston farm, and Frank Golden and others have a rig standing on the H. E. Engle heirs farm.

In Putnam County, there is some activity, and but one test. J. V. Reishman is about due to report in his test on the William Dent farm. H. C. Zogg has made a location for No. 3 on Maddox heirs farm in Scott district, and the Celia Oil & Gas Co. a location for No. 5 on the John Tormey farm, same district. In the same section, the Sowders Oil & Gas Co. is about in the sand with No. 3 on the Pines and Moore farm, as also is W. J. Peterman with his No. 3 on the R. L. Morris farm.

In Wood County, and in William district, the Warren Brothers have rigged up on the J. W. Reed farm, and T. J. Rothwell has reached 950 feet on the Rebecca Anderson farm and shut down with no report. In the same district, Love Brothers are down to 1,050 feet on the Daniel Hoover farm, and Crawley and Carr have made a location for a second test on the C. A. Varner farm. In Walker district, the Four States Oil Co. rigged up and then suspended operations indefinitely on the J. N. Eddy farm. In Union district, Robert Elder

(Continued on Page 78)

HURRY-UP METHODS IN EAST TEXAS FIELDS RESULT IN CROOKED HOLES

Rapid development of the East Rim fields in East Texas has drawn the attention of operators and geologists to that district. The relatively soft formations and the haste to reach the pay have encouraged fast drilling. Moreover, many of the wells are being drilled by small operators, without any precautions against crooked holes. This rapid drilling without checking has caused numerous crooked holes, some very expensive owing to the necessity of plugging back and redrilling, while others were not discovered until after the casing was set. The expense of these will appear later when the wells are put on the pump.

In one case in the Joinerville Pool it was necessary to plug back and redrill over 1,000 feet of hole. This well had reached a depth og 3,300 feet without being checked for verticality. A survey for deviation then was made and the well was found to be approximately 20 degrees off the vertical at 2,500 feet, and over 50 degrees off near the bottom.

In another case no tests for verticality were made until after the casing was set. The tests then showed the hole to be straight to 500 feet, 15 degree of at 2,000 feet, 30 degrees off at 2,500 feet and 15 degrees off at 3,600 feet, the bottom of the casing. It is obvious that when this well is put on the pump the lifting cost will be prohibitive.

Plugged Back and Redrilled

In another well a verticality test was made and the well was found to be off 43 degrees at 2,500 feet. This well, of course, was plugged back and redrilled.

Another well in Rusk County, about 3 miles west of the nearest production, at the time it was completed several weeks ago reported a subsea depth of 3,365 feet without any sand. As the estimated subsea depth of the Woodbine sand in this well was not much below minus 3,300 feet, the belief gained that the hole must be crooked. Eventually a rich oil sand was cored and casing was set on top of the pay at 3,375 feet.

Prior to bringing in the well, a directional survey was made by the Sperry-Sun Well Surveying Co., its Surwell gyroscopic directional surveying instrument being used for this purpose. Although, as is usual in such cases, the results of this survey were held confidential, the owner agreed that they might be published.

This survey showed that the maximum deviation from the vertical was 21 degrees with several abrupt changes. At one depth the angle of deviation changed from 21 degrees to 10 degrees in the length of one fourble (about 90 feet). The bottom of the hole was found to be 220 feet in a northwesterly direction from the mouth and the vertical correction in depth was 42 feet.

Offsets Confirm Survey

This correction applied to the reported depth of the hole placed the top of the producing sand at 3,323 feet below sea level. Since the completion of this well the Magnolia Petroleum Co. has drilled an offset on the south with the top of the sand at minus 3,317 feet, and the Shell Petroleum Corp. has drilled an offset on the east with the top of the sand at minus 3,310 feet.

The resumption in East Texas by many operators of the old "hurry-up" drilling methods is in contrast with the orderly, careful drilling programs under which most of the more recent fields have been developed. The many disadvantages of crooked holes and the accompanying increase of cost of operating are well known.

The examples given indicate the advisability of daily checking of the vertical deviation while drilling, thus enabling the driller to correct immediately any deviation recorded. The examples also show the need of a directional survey when approaching the pay sand. Such a directional survey gives the producer and his geologist the exact location of the bottom of the hole, which even if held within 3 degrees from the vertical at a depth of 3,600 feet may be 185 feet distant from the anticipated location.

Ten Completions in Central Ohio Field

Seven Gas Wells and Three Dry Holes. Two Completions in Indiana and Two in Illinois. Kentucky Market Enlarged

By George A. Whitney
Staff Correspondent, Central West Fields

FINDLAY, Ohio, June 29.—The old Lima Field of northwestern Ohio, is the quietest spot in the entire Central West at this time. J. H. Murphy & Son have a very light gas well on the Harry and Carrie Shumaker farm, Section 10, Hopewell Township, Seneca County. In Hardin County, Cessna Township, Bert Sheldon's test on the Frank Kritzler farm, Section 13, produced 3 bbls. of oil and 6,000 feet of gas from 1,730-78 feet. In Wyandot County, Tymochtee Township, Jones and Coyle's test on the Martha and Edward Calmes farm, Section 17, is reported a dry hole in the Trenton lime at 1,473 feet.

Twenty-seven old producers were abandoned in the Rollersville Field in Scott Township, Sandusky County, by the Ohio Oil Co., Nos. 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19 and 20 S. E. Stahl farm, Section 33; Nos. 2, 5, 7, 8 and 9 D. Cochard farm, Section 34; Nos. 1, 2, 5, 6, 7, 9 and 10 L. Lehman farm, same section, and Nos. 2 and 11 L. Lehman farm, same section.

In Jackson Township, Sandusky County, J. Park Ludwig pulled out old Nos. 1, 2 and 3 Retta Ludwig farm, Section 7.

Lake Shore & Southwestern Metal Co., Inc., is drilling tests on the J. E. Hockman farm, Section 23, Damascus Township, Henry County, also No. 1 on the Chopper lease. Same company is drilling No. 1 Frederick Schafer farm, Section 23, Monroe Township, same county, near McClure and Grand Rapids.

CENTRAL OHIO

Ten completions were reported from the Central Ohio Field of which there were three dry holes and seven gas wells, there being no new oil wells brought in, and in new work starting there were seven locations made and six wells started spudding, a total of 13.

In Ashland County, the Ohio Fuel Gas Co. made one location and started drilling two new wells.

In Lorain County, the Ohio Fuel Gas Co. finished a gas well in No. 1-5,373 on the Bruno Spooner, Lot 60, Columbia Township, and Dillon and McFredericks are drilling No. 3 Cora M. Milles, Lot 88, same township.

In Medina County, Homer Township, the Ohio Fuel Gas Co.'s No. 1-5,550 is a dry hole on the John Kicjek farm, Section 5, as broken sand was found.

In Wayne County, Bryan and others are drilling a second test on the Mary Brinkerhoff, Section 23, Plain Township, and in Milton Township, L. Harpster is drilling a test on the George R. James farm, Section 12.

In Coshocton County, Pike Township, Whittmer & McClay have a nice gas well on the Austin L. Rine farm, Section 7, at 3,214-70 feet.

In Summitt County, Franklin Township, F. A. Brendall and others' No. 1 E. and C. DeWalt farm, Section 25, has a fair gas well and also an oil showing at 4,081-85 feet.

In Licking County, Hopewell Township, the Wehrle Gas Co. is starting a test on the Hartman & Loughman farm, Lot 17.

In Muskingum County, Wayne Township, the Ohio Fuel Gas Co.'s No. 1-5,448 Lincoln N. Taylor farm, Section 3, is reported with no showing at a total depth of 4,046 feet, and goes as a duster. Same company's No. 1-5,494, Chester Harrop farm, Section 5, Brush Creek Township, is a gas well at 3,976 feet.

In Athens County, York Township, Frank O'Mara and others are at work on No. 12 on the Hocking-Athens Coal Co.'s property, Section 35.

In Tuscarawas County, Bucks Township, the Wehrle Gas Co.'s No. 1 on the Warner-Sundheimer farm, in the second quarter proved dry at 2,985 feet, also tools are lost in the hole. In Washington Township, Hopewell Gas Co. is starting a test on the A. E. and H. B. Quigley farm, in Lots 23, 27 and 29.

In Stark County, Jackson Township, Wiser Oil Co. has a nice gas well in No. 1 on the G. W. Slagle Allotment, Section 14, in the Clinton lime, from 4,248-4,463 feet, and F. A. Brendall and others' No. 1 John Stockert, Section 26, is a good gas producer at 4,406 feet. Vettler and others have a nice gas well on the Ruby School lot, Section 6, in the Clinton at 4,173-98 feet. Wiser Oil Co. is starting a test on the Louis A. Firestone farm, Section 34, Jackson Township. Wittmer Properties, trustee made a location on the Samuel Myers farm, Section 15, Lawrence Township, Stark County.

In Belmont County, Somerset Township, Gibson Bradfield and others' test on the James Butler, Jr. farm, Section 32, is rated as a 2,000,000-foot gas well in the Salt sand at 1,033-45 feet.

In Knox County, H. E. Perkins made a location on the Gertrude Weaver farm, Lot 17, Howard Township.

In Chatham Township, Medina County, Edson & Sons' No. 16 Archie E. Packard farm, Section 13, is reported good for 5 bbls. at a depth of 395 feet.

INDIANA

Only two completions were reported in the Indiana fields for the week. C. E. Wommer's second test in the northeast corner of the Frank Hale, NE Section 30, Washington Township, Pike County, developed 2,000,000 feet of gas at 1,116 feet.

Charles W. Scott's No. 3, 460 feet from the north and west lines of the C. L. Davis No. 2 farm, SW Section 14, Turman Township, Sullivan County, pumped 2 bbls. at a total depth of 825 feet.

ILLINOIS

Two completions were made in the Illinois Field, both being in Clinton County and dusters. Frank Folks and others' test, 660 feet from the south line and 140 feet from the east line of the Wineburg Brothers, SE Section 18, Lakeside Township. This well had a slight showing of oil at 1,304 feet, but when drilled to a total depth of 1,330 feet, was given up as a failure. Eastern Oil & Gas Co.'s test, 1,320 feet from the north line and 990 feet from the east line of the H. Holtgrave farm, Section 35, St. Rose Township, same county, was a dry hole at a depth of 1,200 feet.

Five wells in the Dupo Field of Sugar Loaf Township, St. Clair County, southeast of East St. Louis, were pulled out and abandoned after producing a few years from a shallow depth and in the Trenton lime formation. They were L. G. Blackmore and others' No. 1 M. and E. Myers, NE Section 28, Sugar Loaf Township; Otto Karbe's No. 1 S. T. Swartz, NE Section 28; Thomas Whalen's No. 3 Lena Herbet, SE Section 21; same party did the same with No. 1 L. A. Briggs, same section, and Cole Esther and others abandoned No. 1 Lawrence Lindemann, SE Section 21, same township, and in the townsite of Dupo.

Drilling wells that are idle are: Two in Randolph County, two in Monroe County, one in Washington County, two in Madison County, and one in Crawford County, the latter being L. C. McDowell and others' No. 11 J. F. Higgins farm No. 3, Section 21, Montgomery Township.

The State Geological Survey, under the supervision of M. M. Leighton, chief, just has off the press a list of publications on the geology of Illinois. Urbana, Ill., is the headquarters of the state geologist.

KENTUCKY

Oil operators in the Owensboro and adjoining fields of western Kentucky, who have been able to market only a part of their production for several weeks on account of a restriction enforced by the pipe lines serving the field, may sell as much of their oil as they care to, it was announced by the Illinois Pipe Line Co. and the Producers Pipe Line Co. The amount of oil pumped into the lines is expected to be increased from approximately 4,500 bbls. a day to around 7,000 bbls., it was estimated.

On account of the prevailing low prices of western Kentucky crude oil, 50 cents a barrel, some of the larger operators have indicated they will continue to curtail their production. This will keep the field production from jumping to twice its present total, says the Owens-

(Continued on Page 78)

OLD METHOD USED TO PROTECT PIPE LINE

Sandbags laid over pipe line in washing country to divert water away from the right of way.

Personal Paragraphs About Oil Men

Professor Dr. S. Zuber has left Poland and has arrived in Albania for a long professional visit.

* * *

C. G. Staley, formerly state geologist of New Mexico, has been appointed proration umpire of the Hobbs Field in that State.

* * *

E. L. Jones, district geologist for the Shell Petroleum Corporation, San Angelo, Tex., and Mrs. Jones are spending a vacation in California.

* * *

R. P. Huggins, of the Western Gulf Oil Company, was recently elected secretary-treasurer of the Petroleum Accountants Society at the annual meeting held in Los Angeles.

* * *

G. Moses Knebel, formerly with the Standard Oil Company of Venezuela, at Port of Spain, British West Indies, is now with the Creole Petroleum Corporation at Maracaibo, Venezuela.

* * *

Robert Bishop, veteran oil man of Bradford, Pa., is an octogenerian, but he enjoys life in his own way. Last year he made a trip around the world. This year he is on the way to England to visit old friends of his youth.

* * *

Oliver C. (Oscar) Fields, of the O. C. Fields Gasoline Company, and R. C. Wheeler of the General Petroleum Corporation, were recently elected president and vice president respectively of the California Natural Gasoline Association.

* * *

E. G. Seubert, president of the Standard Oil Company of Indiana, and A. W. Peake, vice president in charge of production, have been making an inspection trip in Texas in connection with the company's production operations and holdings in the State.

* * *

B. O. Hammond, formerly representative of the Parkersburg Rig & Reel Company at Fort Worth, Tex., and with the organization for 13 years, is now Texas district manager of the Cypress Tank Company, headquarters of which are at Shreveport, La.

* * *

William T. Terry, a member of the manufacturing department of the Union Oil Company of California, has been transferred from the Los Angeles office to the company's Oleum refinery in the San Francisco Bay region.

* * *

George Allison, superintendent of the Tulsa Oil Corporation, was painfully but not seriously burned, and Charles Bell, fireman, was also painfully burned when one of the company's wells near Overton in Rusk County came in and caught on fire June 23.

* * *

M. (Mink) Manning, superintendent of production, Gulf Coast division, of the Humble Oil & Refining Company, has resigned to take active management of the Houston Oil Field Material Company, Inc. He takes the position formerly held by his brother, S. E. (Red) Manning, who was killed recently.

* * *

Charles Daniels, with the Phillips Petroleum Company, has been transferred from the Greater Seminole district, where he was transportation manager, to Refugio, Tex., where he will be district superintendent. George J. Turner has been transferred from the St. Louis area to Pampa, Tex., as district superintendent.

* * *

Charles P. Weekes, vice president in charge of eastern sales for the Hercules Motors Corporation of Canton, Ohio, sailed June 4 for Russia where he will spend several weeks in the interests of his organization. During Mr. Weekes' absence, A. B. Wehling will have charge of the Hercules Motors Corporation's eastern office in the Chanin Building, New York City.

Frank Bowser, scout for the Arkansas Fuel Oil Company at San Angelo, Tex., has been transferred to Shreveport, La.

* * *

Carl Von Bibra, president of the Exeter Oil Company, has returned to Los Angeles, Calif., following a business and pleasure trip to Europe.

* * *

Louis F. Rothermel, vice president of Deepwater Oil Refineries, Inc., Houston, Tex., is making a two months' business and pleasure trip to Europe.

* * *

John Marston, district land man for the Atlantic Oil Producing Company at San Angelo, Tex., is spending his vacation in Louisiana. Mrs. Marston and little daughter are accompanying him.

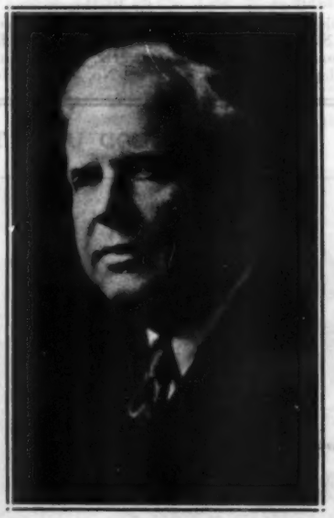
* * *

R. D. Goodrich and wife have sailed from New York to spend several weeks traveling through Italy, Germany and France. Mr. Goodrich is a consulting geologist and independent operator of Fort Worth, Tex.

* * *

Raymond Harris, of the National Supply Company, Arp, Tex., and Miss Hazel Byrd of Mart, were married June 13 at the latter place. The couple met while attending Baylor University in Waco, Tex.

Men of the Industry



J. U. Stair

J. U. Stair, who recently was promoted to the position of vice president in charge of production for the Shell Oil Company, has been manager of California production for the Shell for the last nine years. Mr. Stair has served in many capacities in the oil industry since he became affiliated with the Western Union Oil Company in 1904. He was superintendent of that organization when it was absorbed by the Union Oil Company of Delaware. In 1920, Mr. Stair became general superintendent of Union Oil, having charge of California field operations, and he was occupying that position when the company was acquired by the Shell-Union Oil Corporation in 1922. Since 1922 Mr. Stair has served as division superintendent at Long Beach, Calif., assistant general field superintendent in Los Angeles and general field superintendent and production manager. When Mr. Stair became vice president in charge of production for the Shell he succeeded William C. Reinhardt, who resigned to become manager of the Kettleman North Dome Association.

T. K. Harnsberger, in charge of geology for the Shell Petroleum Company, has sailed for Europe.

* * *

H. M. Craig, of the Gulf Production Company, Fort Worth, Tex., is spending his vacation in Beaumont and other parts of South Texas.

* * *

E. P. Watrous, former general sales manager of the Crandall Packing Company, is now sales manager of The Paxall Co., Inc., of Cranford, N. J.

* * *

N. C. Beim, president of the W. H. Barber Company, Minneapolis, Minn., has been visiting the oil trade in Tulsa, Bartlesville, Oklahoma City, Dallas and other Mid-Continent points.

* * *

Leo Parson, engineering department of the Continental Oil Company, Ponca City, Okla., has been transferred to the Texon Oil & Land Company, with headquarters at Fort Worth, Tex.

* * *

David Donoghue, formerly technical advisor of the Central Proration Committee of Texas, has resumed his consulting practice, and has his offices located in the Fort Worth National Bank Building, Fort Worth, Tex.

* * *

J. Y. Wheeler of Wynnewood, Okla., district manager, Community Natural Gas Company, has been promoted to the position of state manager for the company. He will retain his headquarters in Wynnewood. He has been succeeded as district manager by C. L. Slover of Texas who will also reside in Wynnewood.

* * *

Ted Miles, formerly superintendent of field operations for the Union Oil Company in the Santa Maria Field, California, has been placed in charge of all field operations of the company in the San Joaquin Valley and Coast fields with the title of assistant general superintendent of the northern division.

* * *

L. A. Wainwright, with the Amerada Petroleum Corporation, formerly located at San Antonio, Tex., has been transferred to become district land man at San Angelo, Tex. William H. Taylor, formerly in charge of the West Texas district, was transferred to Tyler in January.

* * *

N. V. Vannikoff, petroleum engineer for the U. S. S. R., has been making an extensive tour of the United States and studying oil production methods followed here. He was in Tulsa last week and left for New York City Wednesday where he will make his headquarters during the balance of his stay in this country with the Amtorg Company.

* * *

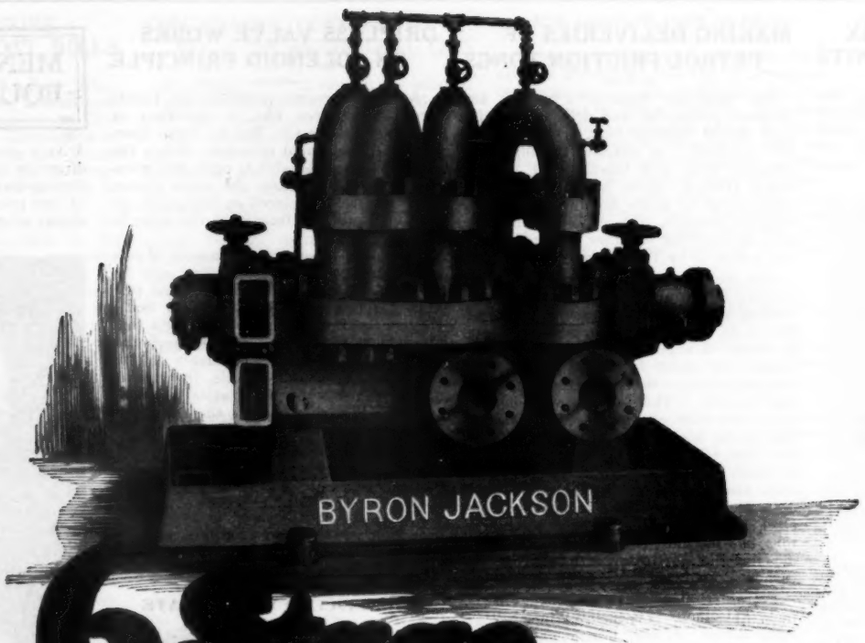
Charles F. Morris, who has been gas engineer of the Public Service Company of Colorado at Denver, has been transferred to Wichita, Kans., as engineer of the Wichita Gas Company. Colin Carter, engineer of the Wichita company, has been transferred to Hutchinson as superintendent of that property.

* * *

Forest B. Smith, of the Humble Oil & Refining Company, formerly stationed at the company's offices in Houston, Tex., has been transferred to the district offices of the company at McCamey, Tex., to assume new duties as district land man at that place. Finely Scruggs, who has been in this position at McCamey, has been transferred to East Texas by the company.

* * *

Gurney Peeples, of the Black, Sivalls & Bryson Tank Company, formerly representative in Oklahoma City, has been transferred to Tyler, Tex., to become district manager in the East Texas district. Lloyd Harding of the same company, Bartlesville, Okla., has been making an inspection trip in the East Texas district and visiting the Fort Worth office. Jim Morgan, representative at Tulsa, has also been spending some time looking over the East Texas district.



6 Stage Multiplex Pipe Line Pump

THE new 6-stage Byron Jackson Oil Line Multiplex has been designed to produce full pipe line pressure in a single pump. The wide acceptance of the 4-stage Oil Line Multiplex which reaches full pressure with two pumps operating in series, has made any introduction of this latest development unnecessary. Handling oil fluids up to 800 pounds pressure, the six-stage, like the four-stage Multiplex, is inherently balanced, without the application of a balancing device, ruggedly built and designed for direct connection to electric motor or steam turbine. It is notable for its low first cost and small housing requirements. The steady pressure developed by this pump insures the delivery of the maximum capacity of oil through the line. Built standard for capacities ranging from 10,000 to 45,000 barrels per day.

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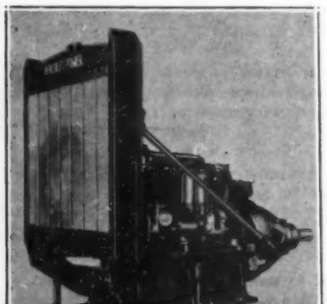
HERCULES DEVELOPS HX SERIES OF POWER UNITS

For oil field service, the Hercules Motors Corp. of Canton, Ohio, has developed an additional line of power units built around the heavy-duty HX series of six-cylinder engines. The HX power units



are built in five sizes: the HXA, 4¾" x6", displacement 638 cubic inches; the HXB, 5"x6", displacement 707 cubic inches; the HXC, 5¼"x6", displacement 779 cubic inches; the HXD, 5½"x6", displacement 855 cubic inches, and the HXE, 5¾"x6", displacement 935 cubic inches.

All HX power units in the standard assembly include a radiator of ample proportions to insure proper cooling, a clutch power takeoff and all necessary engine accessories. A control box located on the opposite end from the radiator provides for convenient regulation of carburetor and magneto. The radiator frame is strongly braced making the whole assembly exceptionally rigid.

While designed to operate on gasoline, these units can be arranged for operation on natural gas or kerosene. Reduction gears are available as optional equipment.

WIDE INTEREST IN CONTEST

Evidence that a depression period is a boom period for the redesigning of products and the adoption of improved manufacturing processes is seen in the wide interest in the second Lincoln arc welding prize competition, sponsored by the Lincoln Electric Co., Cleveland, Ohio. Forty-one prizes are offered, totaling $17,500, for papers describing the redesign of any product or the design of any proposed product to be fabricated by the arc-welding process. Though this competition does not close until October 1, 1931, entries from 13 foreign countries have been reported. It is pointed out that during times of depression contests in engineering activities provide even greater incentive for design engineers to render industry a service that in turn will stimulate buying markets to renewed activity.

Three interesting booklets have been issued by the Republic Steel Corp., Youngstown, Ohio. "Sheet Iron" is a 64-page, illustrated booklet telling in non-technical language the story of iron-working and describing, step by step, modern commercial practice of sheet rolling. This booklet is used in more than 1,200 schools in this country and Canada. "Toncan Iron Pipe for Permanence" is a 64-page booklet illustrating interesting installations and applications of copper molybdenum iron alloy pipe. "Agathon Alloy Steels" is an illustrated handbook of 132 pages giving authoritative data on alloy steels.

MAKING DELIVERIES OF PETROL FRICTION TONGS

The Gearench Manufacturing Co. announces production and deliveries on its new Petrol friction tong, which has no bits or teeth. A flexible, rocking joint between head and handle, and a full-wrap friction chain hold enables this chain tong to make up and break out, without damage, pipe coated with lead, zinc, galvanizing or other coating. Turning action is by friction only.

The tong is easily applied or removed, rachets freely on any surface, and, according to the manufacturer, never slips. Owing to its construction, it cannot jam or bind. A slight lift on the handle releases the chain instantly. Design of the tongs makes them light, strong, rigid and durable. The jaw member is one piece and thus cannot loosen or spread. The chain hooking slot is integral with the jaw, eliminating distortion and preserving the chain. Extra large pivot bolts are used for attaching jaw to handle. The tongs are made of nickel-chrome steel, hardened and tempered. Each size tong has the most convenient length handle for the particular size pipe to be turned.

Petrol friction tongs are made in 1-inch, 1¼-inch, 1½-inch, 2-inch, 2½-inch, 3-inch, 4-inch, 6-inch and 8-inch sizes. An illustrated descriptive folder may be obtained from the Gearench Manufacturing Co., 313-23 Hughes Street, Houston, Tex.

The American Rolling Mill Co., Middletown, Ohio, has published an attractive handbook on Armco spiral welded pipe, which contains specific information helpful to the user of specially designed pipe requiring a range of diameters from 6 to 24 inches, and a variety of wall thicknesses. It describes the spiral welding process and contains useful tables, etc.

DRIPLESS VALVE WORKS ON SOLENOID PRINCIPLE

A valve recently perfected by Toledo Precision Devices, Inc., a subsidiary of the Toledo Scale Co., Toledo, Ohio, operates on the solenoid principle. When the current is on the valve is open and when the current is broken the valve closes. The valve seat is placed on the outlet, so that no liquid can flow after the valve is closed.

With this valve, exact measures of any liquid are possible as the flow can be stopped instantly. It was designed primarily for use with the Toledo Scale electric cutoff weighing device. With this attachment the liquid passes through the valve and flows into a container on the scale. As the container fills, the weight of its contents is automatically registered on the scale dial by the indicator. When the indicator reaches any predetermined weight it passes over the electric eye, intercepting a beam of light, automatically cutting off the current, thus stopping the flow through the valve.

This valve may be used in any filling operation where exact weights are essential, as in oil refineries, ready mixed concrete plants, paint manufactories, etc.

NICKEL-CLAD STEEL PLATE

With the co-operation of the International Nickel Co., the Lukens Steel Co. of Coatesville, Pa., has developed a hot-rolled bimetal of pure nickel and steel, which is being marketed under the trade name, Lukens nickel-clad steel plate. One surface of the plate is completely clad with pure nickel during the rolling. The percentage of pure nickel can be furnished in various grades from 10 up to 20 per cent of the total plate thickness. This new product provides the corrosion resistance and other advantages of pure nickel in combination with structural strength greater than ordinary steel plate.

PUMPING POWERS MADE FOR SLOW STROKE PRODUCTION

The Oil Well Supply Co. and Westinghouse-Nuttall engineers jointly have developed a new series of unit pumping powers with which they say the costs of pumping small producing wells individually will be less than when pumped from central powers.

Known as the ODH series, these new unit pumping powers are built in several sizes with capacities up to 20 horsepower and pumping speeds from 1 to 30 strokes per minute. They are designed for motor or engine drive.

Their construction and performance are said to make these unit pumping powers particularly desirable for slow stroke continuous pumping, which has proved popular for "strippers" and for small producing wells.

Desired reduction in prime mover speed is obtained with a Westinghouse-Nuttall double reduction gear unit, sturdily constructed to carry the heavy impact loads resulting from stresses set up by the well pumping cycle. The helical, heat-treated gears are mounted on liberally proportioned shafts which turn on roller bearings. A positive splash system supplies an ample amount of lubricating oil to all moving parts during operation. Gear ratios from 11.8:1 to 70.5:1 can be provided, thus making it possible to obtain the correct speed reduction for any well condition and prime mover.

The "Oilwell" crank mounted on the low-speed shaft of the gear unit is of cast iron with four wristpin holes tapered to insure tight pin fits. A locking plate prevents the wristpin from working loose during operation and permits rotation of the crank in either direction. These powers are sold through branch stores of the Oil Well Supply Co. only.

MEN KNOWN *in* THE EQUIPMENT FIELD

At a recent meeting of the board of directors of the Westinghous Electric & Manufacturing Co., J. S. Tritle was elected vice president and general manager in charge of manufacturing, sales and engi-

J. S. Tritle

neering operations, reporting to the president, F. A. Merrick.

Mr. Tritle was born in Virginia City, Nev., in 1872. He graduated from Yale in 1893 with a degree in science. In 1895 he entered the electrical contracting business in which he continued for eight years, after which he became manager of the Kansas City district for the Westinghouse company. In 1915 the St. Louis and Kansas City offices were consolidated, Mr. Tritle assuming charge of both. In 1922 he was made manager of the merchandising division of the general sales department. In 1925, when a separate department was made of the merchandising business, Mr. Tritle was made general manager. On May 1, 1929, he became vice president in charge of manufacturing operations. In his new position Mr. Tritle will retain his headquarters in the Westinghouse company's main works, East Pittsburgh, Pa.

METER FOR TANK TRUCK INTRODUCED BY BRODIE

A compact positive displacement gasoline meter for tank trucks has been introduced by the Ralph N. Brodie Co., Inc., Oakland, Calif., known as the Model X2½-inch Universal petroleum meter. The new product is intended for gravity truck tank use only. Approximately 14"x14"x14" and weighing about 55 pounds, it has a capacity when properly installed with full tank of 60 to 70 gallons per minute. However, as the tank is emptied this speed is reduced to 35 or 40 g.p.m.

When testing out this new meter, Brodie engineers compiled a chart which showed that it has a flow of 120 gallons per minute on a 4-foot head. However, on account of the resistance offered through gasoline pipe lines this speed is reduced to about 70 gallons on actual installations. The Model X2½ is supplied with 2½-inch inlet and outlet, thereby permitting maximum dimensions of pipe and hose.

Natural Gas Industry Developments

INCREASED PRESSURE DOES NOT BOOST BILLS

WASHINGTON, D. C., June 29.—The Bureau of Standards, Department of Commerce, is quoted in a report filed with the Public Utilities Commission of the District of Columbia by the Washington (D. C.) Gas Light Co. as favoring a maximum gas pressure of 10 to 12 inches.

The bureau suggests, in a letter incorporated in the report, that in the District of Columbia "the maximum pressure in any district shall not be greater than 10 inches (or 12 inches) of water column and the pressure in any district shall not fall below one-third the maximum pressure specified in any other district."

The bureau definitely asserts in its letter that increased pressure of gas, in the case of a majority of appliances, does not result in increased gas bills.

Complaints Received

Complaints have been made to the District Commission that pressure in excess of 8 inches last winter caused a large number of excessively high bills to consumers. The rules of the commission provide for a maximum pressure of 6 inches, but the company several months ago was authorized to increase the pressure temporarily to 8 inches. The commission has under consideration the rescinding of this temporary order.

"Our ideas on this subject," the bureau is quoted as stating, "have changed greatly in recent years and the higher pressures now employed have in the main tended toward economy and satisfactory service.

"In the majority of appliances an increased rate of supply does not result in a loss of efficiency. A large portion of the domestic appliances in use show improved efficiency when the rate of gas supply is increased above the manufacturer's rating until incomplete combustion is encountered and frequently even beyond that point.

Effect of Higher Pressure

"In the case of the majority of appliances an increase of pressure does not therefore result in increased gas bills, even though no adjustment is made. We would not expect that an increase in pressure even without a readjustment of appliances would result in materially increased gas bills."

The bureau also declares that the limit of 100 per cent of the minimum placed on pressure variations and in general use throughout the United States "is much too liberal to be satisfactory." It is suggested, therefore, with specific reference to Washington, that the following rule be adopted:

"The company shall divide its distribution system into districts and shall specify for each district the maximum pressure to be maintained within that district. The pressure at the outlet of any consumers' service pipe shall never be less than 50 per cent of the maximum pressure specified for the district in which he is located. The maximum pressure in any district shall not be greater than 10 inches (or 12 inches) of water column and the pressure in any district shall not fall below one-third the maximum pressure specified in any other district."

GAS EQUIPMENT COURSE

In co-operation with the American Gas Association, Columbia University, New York, N. Y., will offer a three weeks' course in gas equipment study, July 6-29, as part of the regular university summer session. Lectures will be conducted by Dr. C. J. Lynde, head of the household equipment department, assisted in laboratory work by T. H. Schleuning, test engineer of the Consolidated Gas Co. of New York.

OKLAHOMA CITY MAY VOTE ON MUNICIPAL GAS

The Oklahoma City council has adopted a recommendation for a $4,000,000 bond issue for a municipal gas plant.

The recommendation had been submitted by a committee of councilmen appointed to study means to obtain lower gas rates in the city for domestic consumers. In its majority report, the committee advocated that an election be called for the $4,000,000 bond issue, either to buy the Oklahoma Natural Gas Corp.'s distributing plants, serving the city, or to build a new plant.

Mayor C. J. Blinn broke the deadlock that led to adoption of the recommendation.

It was recommended that an election not be held until after July 15, and that in the meantime the city consider franchise proposals from private companies. Jesse A. Todd, a member of the gas committee, submitted a minority report opposing a municipal bond issue, and pointing out that a municipal plant would lose money during the three years before the Oklahoma Natural's franchise expires.

The present rate, 57 cents, will be lowered to 50 cents July 1.

ASK RATE REDUCTION

CHILDRESS, Tex., June 29.—City officials of Childress, Wellington, Quanah and Memphis have presented a demand upon the Northern Texas Utility Co. for a reduction in gas rates before July 15.

At a meeting of the officials of the four cities held at Childress the mayors of the cities were appointed a committee to take this action, each city to stand by the others and not take a reduction in rates unless all were given a reduction. This meeting was called by Mayor Allen Grundy of Memphis.

The city officials of Memphis have entered suits against the gas company, alleging the company had not filed annual reports as required by law. The suits ask for penalties of $100 per day. This suit cannot be heard until September, as district court will not be in session before that time.

MIDWEST TO WICHITA

WICHITA, Kans., June 29.—The general offices of the Midwest Gas Corp. will be moved from Oklahoma City to Wichita July 15. The Midwest company is a subsidiary of the Consolidated Gas Utilities Co. of Oklahoma City. Logan W. Cary of Oklahoma City is president of the company and F. A. K. MacFadden secretary.

The Midwest Gas Corp. is a producer and marketer of natural gas. It confines its operations to the eastern part of Kansas. A division office is maintained at Neodesha, Kans., adjacent to the territory in which the company produces and pipes natural gas.

AMERICAN NATURAL GAS

American Natural Gas Corp. and subsidiaries, for quarter ended March 31, 1931, report profit of $1,195,672 after ordinary taxes, subsidiary charges, interest, etc., but before federal taxes, depreciation, depletion and debt discount. Stock consists of 49,980 shares of $7 preferred, 125,459 shares of preference stock and 651,320 common shares, all of no-par value.

Consolidated income account for quarter ended March 31, 1931, follows: Gross revenues, $3,714,848; expenses and taxes, $1,395,276; subsidiary charges, $924,670; interest, $199,230; profit before federal taxes, depreciation, depletion and debt discount.

RIO GRANDE CITY SUPPLY

SAN ANTONIO, Tex., June 29.—Rio Grande Public Service Co. is arranging to supply natural gas to Rio Grande City and Roma in Starr County. Principal personnel in the company are F. A. Hornaday and Terry A. Hornaday, with offices in the Maverick Building in San Antonio. Three shallow gas wells have been completed north of Rio Grande City and additional wells are being drilled and this will be piped to the two cities and distributing systems installed in both cities.

HOLDENVILLE HEARING

Hearing before the Oklahoma State Corporation Commission on the petition of the city of Holdenville for a reduction in its domestic gas rate, set for June 23, has been postponed indefinitely because the commission has not had sufficient time to make an appraisal and audit of the company's property in Holdenville.

The engineering department, according to Ed Hicks, commission secretary, expects to get to the appraisal in the near future and at that time the date for the hearing will be set. Mayor A. A. Scott, urging immediate hearing, cited that an investigation showed him the gas company is getting gas at the gate, not to exceed 8 cents and in some instances 4 cents. The rate of 45 cents being charged Holdenville citizens is an injustice, Mayor Scott said.

WASHINGTON STATE WELLS

The Northwestern Natural Gas Corp. of Wichita, Kans., has moved its Portland, Ore., office to 1421 Northern Life Tower, Seattle, Wash., and the operations of the Northwestern Natural Gas Co. of Kansas, the Northwestern Oil & Gas Co. of Washington and the Northwestern Natural Gas Corp. will be carried on from that office. These companies have completed four gas wells recently, bringing the total in Benton County to 14 gas wells and 1 dry hole. The company has been supplying gas from this field, where the gas is found in a porous basalt formation at very low pressure, since December 15, 1929, in the four towns of Sunnyside, Grandview, Mabton and Prosser. Additional extension is planned for Pasco and Kennewick, Wash., sometime this fall and in addition the company has franchises in Walla Walla, Toppenish, Wapato, Zillah and Granger, Wash.

GAS SALES OFF

Revenues of companies supplying manufactured and natural gas amounted in April to $60,076,833, as compared with $61,957,931 in April last year, a decline of 3 per cent, the American Gas Association announced yesterday from reports of companies serving 13,631,586 customers and representing about 80 per cent of such public utility distribution.

Revenues of the manufactured gas companies aggregated $32,938,731, a drop of 2 per cent, and of the natural gas utilities, $27,138,102, about 4.4 per cent under the figures for April, 1930. Sales of manufactured gas fell 2 per cent and of natural gas almost 8 per cent. Registered sales of gas for domestic uses increased nearly 1 per cent.

32 STATES USING GAS

Natural gas is now distributed in 32 states and by the end of 1931 will be available in 37. Consumption of natural gas in this country has increased more than 130 per cent in the last 10 years.

O. H. SIMONDS ELECTED HEAD OF APPALACHIAN

NEW YORK, June 29.—O. H. Simonds, who for the past eight years has been associated with Electric Bond & Share Co. as operating sponsor of certain of its gas and electric properties in the Mississippi Valley, including United Gas Corp., has been elected president of Appalachian Gas Corp. Mr. Simonds, who leaves Electric Bond & Share Co. to assume his new duties July 1, succeeds H. G. Scott, who remains as a director.

Appalachian Gas Corp.'s president-elect has specialized in the operations end of the gas and electric industry for over 15 years. He is a director of a number of utilities, including United Gas Corp., of which he is also a vice president; Louisiana Power & Light Co., Mississippi Power & Light Co. and also Memphis Natural Gas Co., on which board he has served since organization of the company.

CALIFORNIA GAS SALES

LOS ANGELES, Calif., June 27.—Increase of 21 per cent in the natural dry gas sold to California public utilities in the first quarter of 1931, compared with the same period last year, is reported by Claude C. Brown, gas and electrical engineer for the California Railroad Commission.

Production of natural dry gas was lowered 32 per cent for the 1931 quarter compared to the 1930 period, resulting in a consequent decrease in the wastage of dry gas amounting to 70 per cent.

Total utilization of California dry gas for the first quarter of 1931 was 84,825,000,000 feet, of which amount public utilities purchased 43,357,000,000 feet. Assuming the average per quarter for the year to be the same, the public utilities should use in 1931 a total of 173,428,000,000 feet, against 141,384,977,000 feet used last year, a gain of 22 per cent.

Assuming that utilization for the fourth quarter approximates that of the first quarter, the total for 1931 should be 340,000,000,000 feet as against 323,772,765,000 for 1930, a gain of 5 per cent.

Production and waste during 1931 are more difficult to forecast, due to the fact that all oil companies are trying to bring in their wells with small gas ratio to the oil produced.

GAS BY WIRE

One of the advantages in the natural gas operations of the Electric Bond & Share group is that, aside from distributing gas directly to consumers throughout the southwestern states, operations have taken on a far greater range by "transmission of gas by wire," Sidney Z. Mitchell said at the annual meeting of United Gas stockholders. Mr. Mitchell referred to the increasing use of natural gas as fuel for power generation, which has been applied to many electric plants in the Southwest. Thus natural gas generates electricity for hundreds of miles throughout the company's territory, the electricity in turn traveling further great distances to ultimate consumers.

MUNROE AWARD APPLICATIONS

Applications for the Charles A. Munroe Award, which is a national recognition for achievement in the gas industry, are being received by the American Gas Association, 420 Lexington Avenue, New York. The award will be made to the individual who is found to have made the outstanding contribution toward the advancement of the gas industry during the period from July 1, 1930, to June 30, 1931.

Field Problems and Their Solution

EDITED BY THOMAS F. SMILEY

In order that men connected with the drilling, producing and transporting branches of the petroleum industry may procure quickly a solution of many problems confronting them from time to time in their work, The Oil and Gas Journal has arranged with leading engineers and other recognized authorities to answer questions submitted by readers of this publication pertaining to the work of drilling and producing crude oil and transporting this product.

Everyone is invited to submit questions freely. These questions will be submitted to proper authorities by Mr. Smiley, who edits the page, and answers, based on the best available information, will be published. Each question should give as much detail as possible, especially where it relates to matters where depths of sands, types of sands and operations on adjoining properties would have a bearing on the problem involved. The source of all questions will be considered as confidential and only initials will be published in connection with the question.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or practices which are improvements.

In case an immediate answer is important, one will be given by mail if the writer requests it.

MIXING OIL WITH THE MUD

Is it regarded as good practice to put crude oil in the circulating mud after drilling to a depth of several thousand feet? Several drillers that I know do it. They say it makes the mud perform better.—E. D. S.

The practice you describe is commented on as follows by R. S. Cartwright in an article printed in a booklet, "Rotary Mud," published by the National Pigments & Chemical Co.:

"It is common practice with some operators after reaching considerable depths to use some crude oil or fuel oil in the mud, their purpose being to provide a lubricant or a solvent for shale cuttings which might settle around the cutting tool if circulation were suspended. The writer has found that the addition of oil for this purpose is not desirable, as its actual effect is to coat the finely divided cuttings, as in the flotation method of ore separation, making it almost impossible to get them to settle out. There is the further objection that a mud-mixed oil is difficult to handle in the slush pumps, as it has a solvent action on the balata valve discs commonly used in mud pumps. He suggests that the concentration of oil be not permitted to reach more than 2 per cent by volume.

"If the cutting tool is stuck and can be neither hoisted nor rotated due to cuttings settled around it, it is often possible to free it by circulating oil. On the few occasions that it has been possible for the writer to check the concentration of oil required for this purpose, it has been found that not more than 25 per cent by volume is necessary, although in extreme cases pure oil and not an emulsion with mud is required."

CLOTHING AS SAFETY FACTOR

Shouldn't the clothing worn by men in the oil fields and refineries be an important factor in the matter of safety from fire? Since I was a child I have understood that cotton garments will catch fire much more quickly than woolen. In fact, I always have understood that cotton clothing is what you might call a fire trap for the man who wears it. Is not this true and should not men who face any sort of fire hazard be encouraged to wear woolen clothing rather than cotton? —N. Y. N.

Your supposition regarding the relative flammability of woolen and cotton fabrics is substantially correct, though you probably overemphasize the hazards incurred by a man who wears cotton. You doubtless will be interested in the outcome of flammability tests made last year with woolen and cotton goods by the Shell Petroleum Corp., Wood River, Ill. The results of the tests pointed to woolen clothing as preferable for refinery workers.

When suspended a few inches above a flame, clean cotton cloth shirting and overall material ignite readily while clean woolen cloth only chars. When thrust into the flame woolen cloth ignites more slowly than cotton, and when withdrawn the woolen cloth ceases to burn while the cotton burns readily.

Woolen suiting material absorbs oil (pressure distillate) by capillary action more rapidly than cotton shirting material and will absorb a larger quantity of oil (about 140 per cent for wool and 55 per cent for cotton). Either woolen or cotton cloth is very easily ignited when saturated with a volatile petroleum oil and no difference between the two materials could be detected in this case.

When 15 per cent of pressure distillate is distributed uniformly over clean woolen and cotton cloth, respectively, both can be ignited very easily. After standing one-half hour, however, the cotton cloth can be ignited more easily than the woolen cloth. When 30 per cent by weight of pressure distillate is used, exposure to the air for one hour is required to obtain a difference in the ease of ignition, the cotton then being more easily ignited. With 50 per cent of pressure distillate no difference could be noted in the ease of ignition even after two hours' exposure to the air. These experiments are shown in the following table, which gives the time, in seconds, required to ignite the cloth when suspended about 4 inches above a Fisher burner:

	Percentage of P.D. added to weight of cloth		
Immediately after adding P.D.:	15%	30%	50%
	(Time in seconds)		
Cotton	1	2	0
Wool	3	2	0
½ hour after adding P.D.:			
Cotton	8	4	3
Wool	13	5	4
1 hour after adding P.D.:			
Cotton	4	3	6
Wool	16	9	3
2 hours after adding P.D.:			
Cotton	5	3	2
Wool	15	11	2

From the foregoing it appears that woolen cloth offers considerable protection against flame unless rendered readily flammable by volatile oil. Cotton has a slight advantage in that it absorbs oil less readily and in a smaller degree than wool. When the cloths contain only a small amount of oil and further, when the lighter fractions of the oil have had a short time in which to evaporate (which are conditions more likely to be met with in practice than complete saturation with volatile material) wool offers greater protection than cotton.

SAFE STORAGE OF EXPLOSIVES

Where it is needful to keep a supply of nitroglycerin or other explosives on hand what kind of storage has been the most safe, not only against chance marauders, but against fire, stray bullets, lightning and fire?—P. O. L.

Many magazines for the storage of explosives are built of concrete, bricks or large blocks of stone. There is probably only one objection to these materials; in case of accidental explosion, large parts of the magazine itself may be hurled through the air as missiles. More frequently, magazines are built of a light framework covered with corrugated iron or of double walls filled with sand.

The United States Bureau of Mines has built a bullet-proof and fireproof cement mortar magazine which it recommends. The concrete of the foundation consists of one part cement, three parts sand and five parts gravel. The cement mortar of the walls is one part cement to six parts coarse sand. Besides offering maximum protection in other respects, the magazine is protected against lightning by having its entire roof and all sides covered with galvanized sheet iron, all parts of which are grounded with one-half inch iron rods. These rods extend from the four lower corners of the building and are attached to properly laid earth plates buried well below the moisture line. Soft burned brick is also a recommended material for building magazines.

In selecting a magazine site, advantage should be taken of any natural protection offered by hills and timber. Sandy soil is to be preferred to rocky ground, for in case of accidental explosion, the former will reduce the distance at which damage will be done.

Where an accidental explosion would endanger life or nearby property, it is often desirable to erect barricades on the sides where damage may be done. Barricades are constructed of earth or sand from which all large stones or other projectile material has been removed. The mounds are usually 3 feet higher than the highest point of storage in the magazine. They are 3 feet wide at the top, with a natural slope on both sides, the inner slope reaching to within a few feet of the sides of the magazine.

WHY WAS IT CALLED THAT?

GUSHER

Need for a word to describe a well from which oil literally spurted arose when J. W. Sherman brought in a 2,000-bbl. producer on Oil Creek, Pennsylvania, in 1862. They called it a gusher and the word soon was established in oil field vernacular. Sherman, who bounced a spring-pole till he could drill no deeper by this method, traded a sixteenth interest in his venture for an old horse. The job got too heavy for the horse and another sixteenth went for a small engine and boiler. When the owners could not muster enough money to buy a ton of coal another sixteenth was traded for $80 and a shotgun. The last dollar had been spent when on March 16—just in time to celebrate St. Patrick's Day—the tools pierced the third sand and the well began to spout.

WAYS OF TREATING EMULSIONS

What are the most generally accepted methods of dealing with oil-well emulsions? Can you tell me where I can get some literature on this subject?—D. Y. T.

There are several different methods of dealing with emulsions, the conditions present determining which of them is likely to produce the best results. Get the United States Bureau of Mines Bulletin No. 250, "Oil Field Emulsions," by D. B. Dow, and write to the Tulsa Public Library, Tulsa, for its bibliography on oil-field emulsions. No one method will break down all types of emulsions according to committees of the American Petroleum Institute investigating this problem. In a paper read before the California Natural Gasoline Association, F. W. Lake summarized the methods of treating emulsified petroleum as follows:

"The method used in treating emulsions depends on the kind of oil, kind of water, the degree of oxidation, the relative costs of the different methods in various districts, the percentage recovered and the price of the treated oil. There are five general methods of treating emulsions: (1) With electricity; (2) with chemicals; (3) with heat in open or closed receptacles; (4) with centrifuges; and (5) various combinations of the foregoing.

"The electric method consists in passing the emulsified oil between electrodes of high potential, causing the minute water particles to coalesce at the electrodes until they become large enough to settle from the oil by gravity.

"The action of chemical compounds in precipitating and separating emulsions is dependent on selective colloidal absorption by various hydrophile colloids of the given hydrophode colloids. However, in the destruction of an emulsion formed by a hydrophode colloid, the hydrophile colloid is not necessarily of opposite charge. The compounds used are either crude soaps or sodium salts of sulphonic acids, obtained by sulphonating coal tar or petroleum. Laboratory experiments determine the most efficient hydrophile colloid for destroying the hydrophode colloid. The chemical is mixed with the emulsion either at the pump or in the pipe line, and separated in tanks.

"One of the commonest methods of treating emulsions is the boiling off of the water. This is usually done with steam in pipes either in open or closed receptacles. These vary in design from simple pits, iron receptacles, through to topping or preliminary refining plants. The emulsion is heated in the closed tanks either by steam coils or direct heat, and the vapors are collected and separated. Usually a large amount of distillate is recovered by this method which is lost in the open tank method. Some oils cannot be treated by direct heat as the oil is burned or scorched and rendered unfit for further refining. Topping plants are more complicated dehydrators in which the initial stages of refining are also included. Batteries of steam heated stills are used in heating the emulsion. The vapors are condensed in several condensers which separate the distillate and water. Topping plants thus turn out the distillate, the topped crude and the water separated. Thus the initial step in refining is accomplished in conjunction with the dehydration of the wet crude.

"The centrifuge method is used principally in the recovery of oil from tank bottoms. The emulsion is heated and then run into a supercentrifuge which separates the oil and water and discharges them separately. These plants are portable and used principally in cleaning very dirty light gravity oils."

Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

QUALITY OF RECOVERED OIL FROM CRANKCASE DRAININGS

Our reclaimed oil from crankcase drainings tests—Gravity, 25° A.P.I.; carbon residue, 1.2 per cent; viscosity, 309 at 130°, and 76 at 210°; flash, 440°; fire, 510°; cold test, 10° F.; reaction neutral; odor, burnt. Would you discuss the quality of such oil as to comparison with original oil, peculiar odors of restored oil, action of filter clay when added to still, and any tests necessary to establish the quality?—R. P.

Dr. Winslow H. Herschel of the United States Bureau of Standards is responsible for the statement that lubricating oils do not wear out mechanically in ordinary service in the same way that a piece of rope does. He further explains this as not meaning that lubricating oils do not deteriorate through contamination with dust, particles of metal, accumulations of carbon from unburned portions of the fuel, and the formation of acid from the sulphur in the fuel together with water as a product of combustion. Any process for the recovery of the oil in crankcase drainings must take into consideration these facts.

As the nature of the substances found in crankcase drainings are both mechanical and chemical it is clear that any refining process applied to the material must be designed along the lines of the method used by the refiner, who has similar problems to solve. The refiner removes solids from the oil by settling or by passing the oil through some form of strainer, usually a sieve, but occasionally a coarse cloth, and this is the first step in the reclaiming process. The refiner makes use of chemical methods near the end of the refining operation, but the relatively small volume of crankcase oil handled permits the use of alkali, before the distillation, to correct for any acidity. The diluent, which is usually a heavy naphtha, is removed by distillation and at the same time the oil is reduced to the desired viscosity. The contact method is commonly used for reducing color; here the fuller's earth or contact clay is charged to the still and removes color by adsorption. It is important that care be observed not to permit free access of air while the hot oil is being strained through cloth for the separation of the earth to cause a loss of color as a result of oxidation. If the complete treating operation is to be applied, it will be advisable to treat with sulphuric acid, neutralize with an alkaline wash and separate the sludge after removing the earth.

It is possible to restore the oil so that it will match the original oil but this is not always done, nor is it necessary. Color and odor are difficult and expensive to remove, but it is recognized that these have nothing to do with the lubricating value of an oil. The one objection to recovered oil from crankcase drainings is that organic substances frequently contaminate the drainings, these originate in compounded oils and greases, to give the recovered oil an objectionable odor. As with color, the treatment is by filtering, but in place of fuller's earth a high-grade carbon or charcoal is required as the filtering medium.

Judged by the tests submitted it appears that the recovered oil in this instance is of good quality. The one addition that may be needed to show the quality of the oil is the sulphur content.

DETERMINING FUEL AND STEAM CONSUMPTION

What methods are used for the determination of fuel and steam consumption in fire and steam distillations?—J. L. O.

The most accurate way to arrive at fuel consumption is by actual measurement as used. The common method is by means of gauging from tanks of known capacities. Some refiners make use of meters for measuring the oil; this method is necessary when the fuel tanks are the source of supply for several units and the information concerning fuel consumption is required for a single unit.

For estimating purposes approximations of fuel consumption in refineries are frequently used as follows: When topping and rerunning 1,800,000 B.t.u. are required for all purposes per barrel of crude oil charged, or at the rate of 12,000 B.t.u. per gallon charged for the stills; operating pumps and heating, the same; miscellaneous uses for steam, the same; and 6,000 B.t.u. per gallon of crude oil run account of rerun stills. When cracking the fuel required decreases with increase of operating pressure, varying from 10,000 B.t.u. per gallon of 410° F. endpoint gasoline made at the high pressures to over 50,000 B.t.u. per gallon of product for the lowest pressures.

The quantity of steam used in the stills may be determined by measuring the water in the streams flowing from the condensers.

The steam requirement of a small skimming plant is given in Day's Handbook of the Petroleum Industry, Vol. 1, page 18, on the basis of horsepower per barrel of distillates produced in stills using both fire and steam:

	H.P.
Stripping to off gas oil	2.1
Rerunning distillate	3.5
Steam stilling first 50 per cent...	2.1
Steam stilling second 50 per cent.	14.06

When running a 37.5 A.P.I. gravity crude on this basis, the requirement for process steam, a 1,000-bbl. plant, is 129.2 horsepower; adding 64.8 for forced periods, the total becomes 194 horsepower. Adding 50 horespower for heating and pumping makes a total for all purposes of 244 horsepower. However, very few plants now operate this way, so the modern plant would consume less steam than suggested by this scheme. See Utilizing Exhaust Steam in Refineries, The Oil and Gas Journal, March 5, 1931, page 92.

METALLIC COATINGS FOR CORROSION RESISTANCE

Different coatings, metallic and others, have been used for protecting pipe, stills and tanks against corrosion. Do you mind discussing the merits especially of metallic coverings, linings and sprays when used for this purpose?—A. T. C.

There are many metals, and metallic combinations or alloys, used as coatings for protecting metallic vessels and numerous articles of commerce. Among the metals applied by dipping, spraying and electroplating are zinc, lead, cadmium, tin, aluminum, nickel, chromium, silver and gold. The most widely used is zinc in the form of galvanizing. This is extensively used where there is not serious fumes to contend with, such as where protection from normal atmospheric corrosion is desired.

The methods of combating corrosion in refinery equipment was discussed by R. L. Duff before the American Petroleum Institute, Report Meeting, December 4, 1929. The summary following is from this paper.

The Schoop process, which is a method of spraying molten metals to form a protective coating, has been used with some success on still bottoms and tubes in topping service. Several tests demonstrated the ability of an aluminum coating applied by this process to increase the life of a still bottom by approximately 33 per cent. The speed of application of this coating is very slow as only a small area is covered by the spray. Abrasion will damage this coating and permit localized attack of the parent metal.

Schoop process aluminum coatings tried on the inside of several tanks produced failures which are attributed largely to porosity, a detrimental factor of this process unless heavy coatings are applied. Heavier coatings, of course, consume considerable time in their application.

Lead coating by this method was also tried on the underside of an agitator roof but failure occurred in four months, due largely to thin coating and porosity. Failures were also noted on inside of pressure vessels which had been aluminum coated.

Lead coating has some advantages but in thin coats is often porous and ultimately fails as several tests have shown. In the heavier coats, however, there is a process whereby the lead is applied to steel that has a perfect bond and affords good protection against corrosion. Agitator roof doors have been in use for about two years successfully protected against severe corrosive conditions by a coating of this kind.

Under certain conditions whitewash has proved quite efficient in retarding corrosion of pressure vessels but it must be renewed continually. Concrete is also a practical coating for the inside of such vessels.

Calorized tubes in a test in an oil cracking still gave good service but in every case were equaled simultaneously by plain carbon steel tubes in the same unit. Calorizing protects the outside of the tube against oxidation but unfortunately the inside coating is removed in a very short time by the turbine cleaner.

Cadmium coating is being used quite extensively of late and has merit in resisting atmospheric corrosion. However, it is of little value in an oil refinery where a few hours' exposure to the fume-laden atmosphere causes discolorization followed by complete failure.

In applying protective coatings regardless of their kind, absolute cleanliness is essential and field applications of paints and metallic coatings are preceded by sand blasting to present a clean surface and afford better bond.

The metal is yet to be found, if at all, that will answer all the corrosion problems. There is no cure-all, but the art of alloying various metals is progressing rapidly and great strides are being made in combating corrosion by the use of alloys for specific service conditions.

RACING CAR ENGINES AND STOCK CAR ENGINES

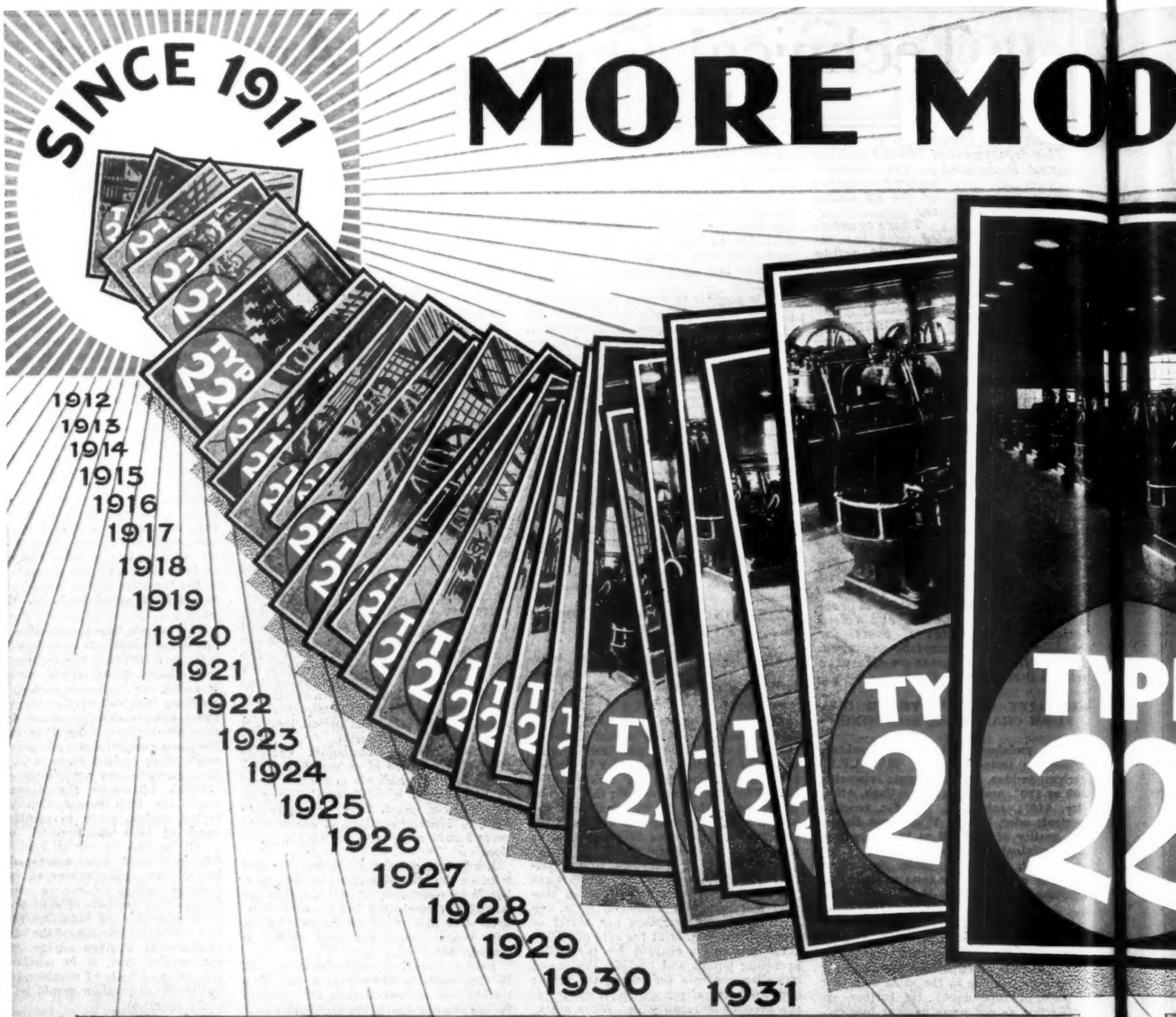
In reading of the annual Indianapolis Speed Races I note reference is made to motors used in the participating cars employing compression ratios of as high as 11 and 12 to 1. Would you please kindly inform me through your section, of what method is used or what fuel is burned to accomplish the successful operation of these extremely high compression ratios? Also, why aren't they employed in present stock cars?

What is the present average speed of the engines in our automobiles of today, under ordinary road driving? I understand that the motors of today's cars average a higher speed, with efficiency, than did those of only a few years ago. Also, what is the road speed of the highest speed engines in today's popular cars, as contrasted with my previous question of the "average engine speed" of all cars of the later models?—A. M. M.

The permissible compression ratio of racing car engines is considerably higher than that of stock car engines for several reasons. First, the operating speed of racing car engines is so high that the resulting low volumetric efficiency produces compression pressures far lower than would be developed in engines of the same compression ratio operating at much lower speeds. Since it is compression pressure—and not compression ratio—which influences the detonation of fuels, the high compression ratios of racing engines serve to maintain pressures at high speed which ordinarily would be experienced at low speeds in engines of much lower compression ratio. Second, the cylinder bore of high compression racing engines is considerably smaller than the bore of most present-day stock cars and any reduction in cylinder bore tends to decrease the detonating tendency of a given engine. Third, by disregarding cost, it is possible to obtain selected fuels of considerably higher antiknock value than would be commercially practical.

The average speed of the engine in present-day automobiles at 40 miles per hour is slightly less than 2,000 r.p.m. At 60 miles per hour the average is slightly less than 3,000 r.p.m. Corresponding values in 1925 were substantially the same as those at present. The average maximum power speed of present-day engines is approximately 3,200 r.p.m. which corresponds to a car speed of about 65 miles per hour. The average maximum power speed of 1925 engines was approximately 2,600 r.p.m. corresponding to a car speed of about 53 miles per hour. The highest maximum power engine speed listed in trade publications for present-day automobiles is 4,200 r.p.m.

The high speed attained by racing cars, and those contending for records, depends principally upon ability to supply high horsepower with low weight and air penetration. These factors are very important when making the straight away records at Daytona Beach. The speed record of 207.55 miles per hour by Keech in 1928, was made in a car with three Liberty engines. The 1931 record of 245.73 miles per hour by Campbell, is said to have been made with an engine developing 1,450 horsepower for a weight approximating 1,000 pounds. The great speed was made possible by the additional factor of excellent aerodynamic design of the car.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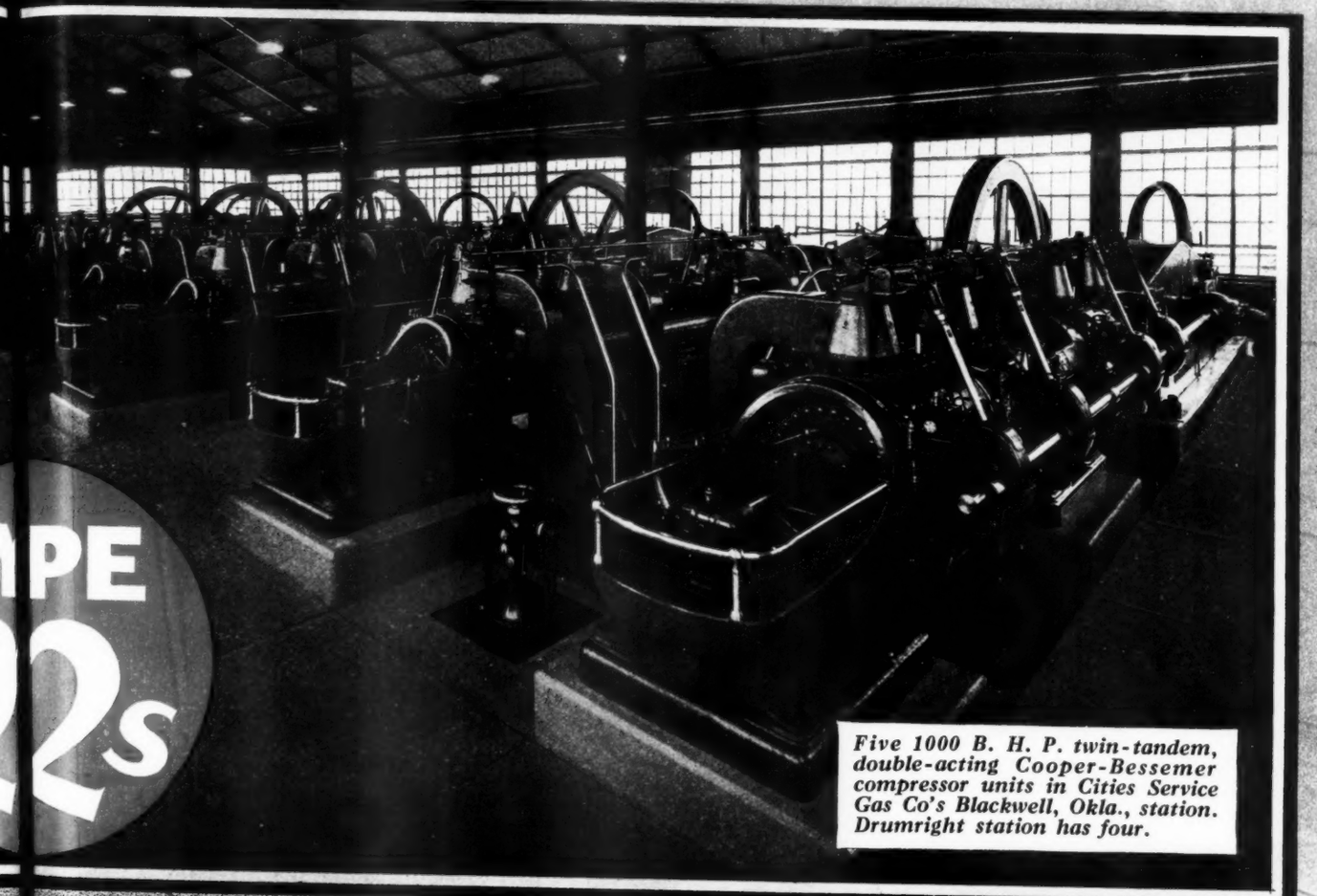

Five 1000 B. H. P. twin-tandem, double-acting Cooper-Bessemer compressor units in Cities Service Gas Co's Blackwell, Okla., station. Drumright station has four.

FOR twenty years the latest Type-22 installations have served as the gas industry's guide to advanced compressor-unit engineering. Constantly designed to the minute, Type-22's reveal a degree of engineering leadership today that no buyer of main-line units can wisely overlook. If sheer dominance in total horsepower doesn't convince you, a critical inspection of any recent installation surely will.

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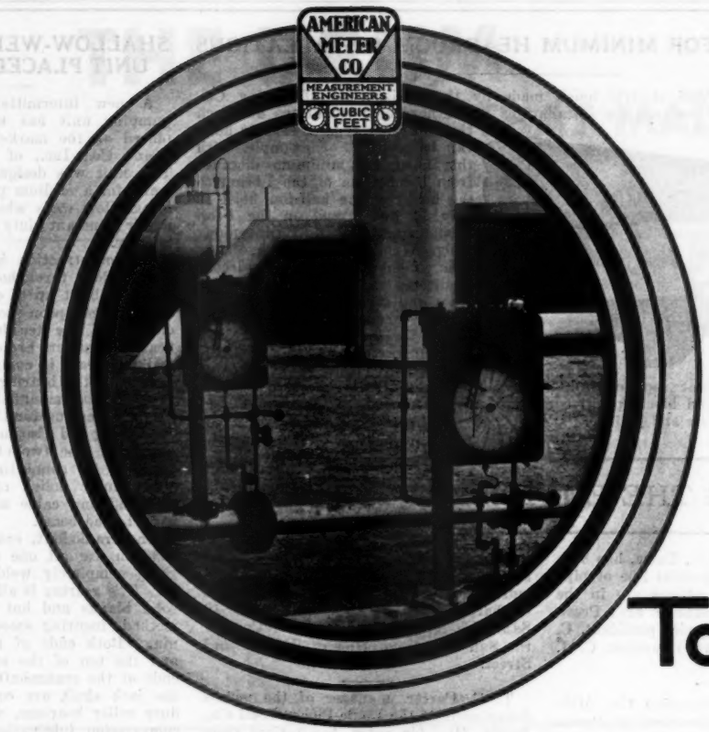
Los Angeles, California

Suite No. 301, 25 W. 43rd St.
New York, N. Y.

Oil Men Snapped By The Journal's Cameras

1—J. T. Gragon, clerk; C. C. Bender, superintendent; and W. C. Boatwright, chief operator, Phillips Petroleum Co., Pampa, Texas. 2—J. B. Davis, plant chemist, Carter Oil Co.'s gasoline plant, Little River, Okla. 3—E. L. Moseley, representative, South Chester Tube Co., Houston, Texas. 4—H. J. Tanner, general superintendent, Petroleum Marketing Corp., Tyler, Texas. 5—J. F. Petroskey, superintendent, Petroleum Marketing Corp., Tyler, Texas. 6—Right to left: Charles A. Caruso, president, MacDeb Drilling Co.; Arthur Maddocks, superintendent; C. A. Walter, driller; William H. Ingersoll, head driller; and Oakley Ingersoll; crew at MacDeb Drilling Co.'s No. 1 Fitzsimmons, Arapahoe County, Colorado. 7—Tom E. King, assistant superintendent, and Dallas J. Matthews, Jr., superintendent; N. A. Saigh Company, San Antonio, Texas; Roy L. Day, superintendent, Day Construction Co., Dallas, Texas.



To Provide

THE FACTS ON FUEL

for Drilling Operations, Compressor Stations, Refinery Power Plants

Accurate measurement of fuel at field metering stations is undeniably important. And for such service Westcott Orifice Meters are chosen by engineers belonging to two distinct groups—those responsible for maintaining the efficiency of equipment, and those who demonstrate their own efficiency in choosing the right equipment. Could any approval of Westcott accuracy and reliability in service be stronger than theirs?

METRIC METERS

METRIC METAL WORKS
ERIE, PENNSYLVANIA
Ironcase, Tinned Steel Case and Orifice Meters

AMERICAN METER COMPANY
INCORPORATED
The World's Largest Manufacturers of Gas Meters and Allied Apparatus
Established 1836

SALES . . . ERIE - DALLAS - TULSA - DENVER - LOS ANGELES - SAN FRANCISCO - KANSAS CITY - BIRMINGHAM
SERVICE . . . PITTSBURGH - CHICAGO - PHILADELPHIA - NEW YORK - BALTIMORE - BOSTON - ALBANY - HOUSTON

Oil Industry Equipment and Supplies

NEW PRODUCTS OFFERED BY DIAMOND RUBBER CO.

Four new developments in the rubber field are announced by the Diamond Rubber Co., Akron, Ohio. One is a new grade of asbestos sheet packing, intended especially for use with hot oil. It is subjected to a special treatment that makes it extremely compact and resistant to the action of oils and gasoline. Under the standard compression test a pressure of 40,000 to 45,000 pounds is required to make the new packing fail, and immersion tests in kerosene show it to be a superior product.

A new rubber matting for use as a safety insulator for the operatives of power switchboards, is guaranteed to withstand 15,000 volts under the voltage test, and 40,000 volts under the dielectric test, prescribed by the American Society for Testing Materials. The matting, one-quarter inch thick, is made with six laminations of high grade rubber, and a ply of fabric to give additional strength.

A new dressing for rubber belts contains no oil or grease, and no chemicals harmful to belt or pulley. It is not inflammable, retains its tackiness for a long period, and is said to double the pulling power of the belt. The dressing comes in stick form.

A new kind of car washing hose combines plies of wrapped fabric and an outer seamless ply of 48 strong twisted cords horizontally braided, with a newly developed rubber compound having both high resistance to heat and oil, and an unusual toughness. More than 1,300 pounds pressure is required to burst it. It has been on test at service stations and the results are reported to show that it practically doubles the service obtained.

EUREKA CABLE CLIP HAS BIG GRIPPING SURFACES

"The triple-strength clip that does not slip" is the designation applied to the Eureka wire rope clip, made by the Eureka Metal Products Co., 2208 Elmwood Avenue, Buffalo, N. Y. It has big surfaces for the cable, both top and bottom. It has two large jaws that get a strong grip. It takes either right or left-lay cable and strands of any pitch. Regardless of the size of the wrench used in tightening the Eureka clip, it is said no injury to the cable is possible. Double gripping surface prevents distortion of the cable, no matter how tightly the clips are pulled down. It is declared the clip cannot be put on wrong. There are no "circle bends" in the cable and the clip can be put on with the live cable at either side. An extra jaw, an exclusive feature, is peened to the U.

The cable is said to be conserved by eliminating distortion and by preventing cutting of the strands by U bolts. Fewer clips are said to be needed to give strength and safety.

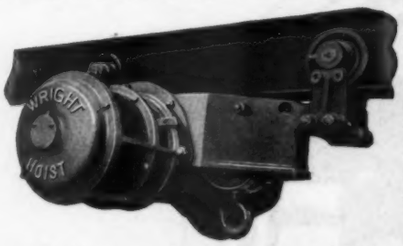
The Eureka clips come in steel or bronze. The Lucey Products Corp., the Frick-Reid Supply Corp. and the Atlas Supply Co. are distributors. L. D. Baird is Tulsa representative.

BALDWIN ACQUIRES COMPANIES

The Baldwin Locomotive Works has purchased the subsidiary companies of Cramp Morris Industrials, Inc. These include the I. P. Morris & De La Vergne, Inc., of Philadelphia, De La Vergne Engine Co., of Philadelphia, Cramp Brass & Iron Foundries Co. of Philadelphia, Federal Steel Foundries Co. of Chester, Pa., and the Pelton Water Wheel Co. of San Francisco.

HOIST MADE FOR MINIMUM HEADROOM INSTALLATIONS

The new type WH electric hoist, made by the Wright Manufacturing Co., Bridgeport, Conn., is designed for installations where headroom conditions are such that no other type of electric hoist can be used. For example, with this hoist the minimum distance from the bottom of the I-beam to the hook on the half-ton hoist is only 11 inches and on the 1-ton hoist only 13 inches. By ingenious design Wright engineers have been able to meet minimum headroom conditions and still keep the hoist drum and sheaves of ample size to prevent excessive cable wear.



The Wright type WH hoist has the features of the Wright standard electric hoists, which include push button or pendant rope control, Tru-lay preformed cable, safety type limit switch, safety type load block, positive mechanical brake, oil bath lubrication, and heat-treated forged gears and pinions.

AMONG THE EQUIPMENT HOUSES

Roger O. Moore & Co., Tulsa, has been incorporated to do a general line of pipe line contracting. Its offices are in the Hunt Building. The officers are: President, Roger O. Moore; vice president, C. B. Creekmore; secretary-treasurer, C. J. Creekmore.

The Russell Manufacturing Co., Middletown, Conn., manufacturer of Rusco brake linings and other fabric products, has made Daniel E. Weedon treasurer and general manager to succeed William C. Fisher, who retired June 1 after 50 years' service with the company to become vice president in an advisory capacity.

The McIntosh & Seymour Corp., Auburn, N. Y., has closed its Jacksonville, Fla., office and opened one at 910 Seventeenth Street N. W., Washington, D. C.

Neilan Co., Ltd., manufacturer of automatic regulating and control equipment, has opened a branch office at 1301 Clark Building, Pittsburgh, Pa. Bruce Irwin, sales engineer, is manager.

The Tulsa offices of the Guiberson Corp. have been moved to 505 Wright Building. "Jimmie" Duff is in charge.

The Dodd Industrial Supply Co. has been organized to handle Louis Allis Co. motors in California. Dodd Mauldin is in charge of the Los Angeles office at 810 Santa Fe Avenue, and R. D. McCrea of the San Francisco office at 648 Howard Street.

T. C. Carter, manager of the metals department of the Eagle-Picher Lead Co., Joplin, Mo., for years, has retired from that branch of the organization and has been appointed manager of the insulation department.

J. C. McQuiston, general advertising manager of the Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa., has announced his retirement.

The Iverson Tool Co. of Okmulgee, Okla., is shipping high-pressure fittings to equip completed wells made in its Okmulgee factory to the big East Texas oil fields. The company is operating three supply houses in the East Texas oil area —Kilgore, Henderson-Joinerville and Longview.

The Drane Tank Co. offices in Tulsa have been moved from the Kennedy Building to 503 Wright Building.

NOTES ABOUT TRADE LITERATURE

Bulletin No. 755, issued by the Chicago Pneumatic Tool Co., New York, describes a new portable compressor with six-cylinder engine.

The Pickering Governor Co., Portland, Conn., has issued a new catalog devoted to the company's steam governors. The company is giving special attention to its combination form of governor which embodies a stop valve.

A 36-page booklet, illustrated and printed on heavy paper, has been published by the advertising committee of the subsidiary manufacturing companies of the United States Steel Corp. It is devoted to U.S.S. stainless and heat-resisting steels.

"Just Like Mountain Air" is the title of a folder issued by the Circle "L" Electric Co., Tulsa, and describing American Blower electric ventilation equipment.

A folder prepared by the Lukens Steel Co., Coatesville, Pa., announces Lukens nickel-clad steel plate.

The Bridgeport Machine Co., Wichita, Kans., is mailing a bulletin about Hychrome drill pipe floats.

The L. H. Gilmer Co., Tacony, Philadelphia, Pa., is sending out a new catalog devoted to V-belts. It contains helpful formulas for V-belt calculations and other engineering data.

The Industrial Institute, Jersey City, N. J., announces publication of the Diesel Reference Guide, a 300-page book, by Julius Rosbloom.

How the operation and the mixing of gas in so-called "bottled gas" plants is made fully automatic is described in a booklet, "Butane Gas Plant Control," just published by Cutler-Hammer, Inc., Milwaukee, Wis., manufacturer of gas-measuring and control instruments.

SHALLOW-WELL PUMPING UNIT PLACED ON MARKET

A new intermittent-duty, single-well pumping unit has been developed and placed on the market by the American Crane Co., Inc., of Friendship, N. Y. This unit was designed to meet the demand for a medium priced pumping jack for shallow wells where the cost of high power constant duty equipment is prohibitive.

The construction is all steel, electrically welded throughout. The main base frame is built up of channels and plates and the sampson post is built up of channels. The tee bar and the shaft-bearing retainers are one single unit. The walking beam is composed of two channels with the bearing in the top of the sampson post mounted between the channels and bearing for the upper end of the connecting rod also mounted between the channels. The two channels are welded together by connecting plates and the semicircular polish rod guide with the selfequalizing cable support are welded solid to the beam.

The crankshaft, crank and connecting rod pin are all one solid unit of steel parts completely welded before machining. The gearing is all steel, turned from solid blanks and but by the generating method, insuring smooth and easy running. Both ends of the connecting rod and the top of the sampson post, both ends of the crangshaft and both ends of the jack shaft are equipped with high-duty roller bearings, with Alemite high-compression lubrication. The gears are completely covered by an all-welded sheet metal case for protection of the gears and to avoid accident.

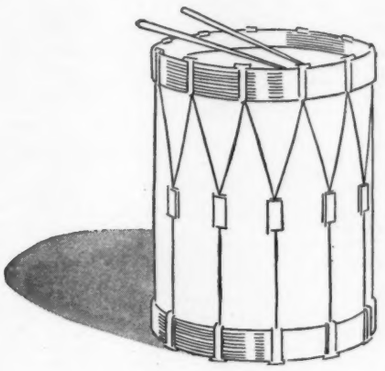
CUTTINGS ARE SCREENED FROM THE DRILLING MUD

The Lemco mud screen, manufactured by the Leahy-McNeely Co., Ltd., Long Beach, Calif., and distributed by the Baroid Sales Co., Los Angeles, Calif., is a mechanically vibrated screen for continuously separating the cuttings from the circulating mud system. It is placed in an inclined position adjacent to the rig and the mud discharging from the hole is led to the upper portion of the screen. The vibrating motion screens out the solids and cuttings and forces the mud through the fine openings in the wire and it is returned to the circulating system for use again. The shale or sand cuttings fall from the lower end of the screen almost entirely free from mud. The manufacturers say the device was designed especially for the separation of solid material from drilling mud and is not an outgrowth of dry-screening or classification of dry materials. The vibration is applied at right angles to the screen and with such rapidity that the mud is literally knocked through the fine meshes of the wire cloth.

Only the screen assemblies are vibrated; the framework remains rigid at all times. All bearing surfaces in the vibrators and in the power units are tightly enclosed in order to retain the lubricant in which all moving parts are immersed and to insure protection of the vibrating mechanism from corrosion and abrasion.

The unit is supported on light timbers which can be measured and installed at the location. No special foundation or expensive concrete work is necessary. The wire cloth screen assembly is stretched and assembled at the factory in a light flexible steel frame. When it becomes necessary to change the screen, the entire screen assembly can be replaced quickly by removing the four bolts which hold it to the frame. Units can be supplied with either electrically or steam driven vibrating devices.

THE DRUM
THAT MADE HISTORY
(IT'S RED)



It houses Tret-O-litE, the patented process for reclaiming cut oil and B. S. It has made and is making oil history and profit history; and it will make financial history for you; often for a fraction of a cent per barrel you can turn that petroleum emulsion into real dollars. No "ifs", "ands" or "guesses" about it; it's one of the few sure thing investments you'll ever see. Call the Tret-O-litE man — he's at the end of your telephone and knows everything you'll want to know about treating cut oil.

TRETOLITE COMPANY
Webster Groves, St. Louis County, Mo.

Tret-O-litE

REG. U. S. PAT. OFFICE OGJ 7-2 Gray

PROCESS PATENTED

an *Unusually* efficient combination

SIMPLEX
SQUARE-FLANGED
CONDENSER PIPING

•

ACIPCO
Improved
ASBESTOS GASKETS

COIL MADE WITH SIMPLEX SQUARE-FLANGED CONDENSER PIPING

represents space saving as compared with any other type of piping or condensing material now available.

GASKET SAMPLES IN 54° BAUME SOLUTION

ACIPCO Improved Asbestos Gasket (left-hand jar) has resisted the attack of the gasoline solution. ORDINARY Asbestos Gasket (right-hand jar) has deteriorated; the cement binder has completely disintegrated and is in solution, causing milky appearance.

THESE two comparatively recent developments by Acipco research engineers are winning many new friends in the refinery industry. Simplex Square Flanged Piping is simply the well-known, time-tested Simplex Cast Iron Condenser Piping with an improved *square* flange design which saves coil space up to 50 per cent or even more, depending on design of coil. The accompanying photograph illustrates the compactness of coils made with square-flanged piping. Only the exterior of the flange has been changed. ¶ Acipco Improved Asbestos Gaskets are especially designed to withstand the deteriorative effect of refinery distillates, to eliminate the rigidity of the flanged pipe joint, and to provide for joint deflection. A complete, illustrated catalog describing these important improvements will be mailed you free on request. Address Acipco office nearest you.

AMERICAN
CAST IRON PIPE COMPANY
BIRMINGHAM, ALABAMA

NEW YORK CITY SAN FRANCISCO CLEVELAND
CHICAGO MINNEAPOLIS LOS ANGELES
KANSAS CITY DALLAS SEATTLE

317 R

CALIFORNIA OIL FIELD OPERATIONS FOR MAY, 1931

According to figures collected by the American Petroleum Institute, Pacific Coast office, the total production of crude oil in California for May amounted to 16,448,960 bbls., an average of 530,612 bbls. per day. This is an increase of 3,827 bbls. per day over April production.

Total stocks of crude and all products in Pacific Coast territory decreased during the month 1,440,065 bbls. The total stocks at the end of the month were 175,712,300 bbls. The total stock decrease for 1931, up to May 31, was 5,320,841 bbls.

Twenty-seven wells were completed during the month with an initial daily production of 44,915 bbls., compared with 17 wells completed during April with an initial production of 16,653 bbls.

CRUDE PETROLEUM PRODUCTION

(Figures of production and stocks are in barrels of 42 gallons)

	Barrels per month	Daily average		
		May, 1931	Apr., 1931	May, 1930
Group No. 1:				
Coalinga	262,644	8,472	8,417	9,343
Elk Hills	453,170	14,618	14,871	19,701
Fruitvale	70,406	2,271	2,403	2,538
Kern River	350,161	11,296	11,312	15,036
Kettleman Hills	1,189,446	38,369	36,132	14,815
Lost Hills-Belridge	190,787	6,154	5,752	2,249
McKittrick	61,831	1,995	3,687	3,933
Midway-Sunset	1,650,439	53,240	53,949	63,643
Mount Poso	245,323	7,914	7,613	9,927
Round Mountain	8,575	277	210	3,547
Wheeler Ridge	16,597	535	527	603
Group No. 2:				
Capitan	.....	.....	.....	10
Elwood	1,082,218	34,910	35,597	49,456
Rincon	59,514	1,920	1,960	3,052
Santa Barbara	17,120	552	332	.....
Santa Maria	93,119	3,004	2,760	3,445
Summerland	5,073	164	167	354
Ventura Avenue	1,348,734	43,508	44,827	48,501
Ventura-Newhall	116,854	3,770	3,676	4,901
Watsonville	1,937	62	64	61
Group No. 3:				
Coyote	310,168	10,005	10,341	10,222
Domingues	358,913	11,578	11,834	10,476
Fullerton (Brea Olinda)	310,259	10,008	10,055	12,649
Huntington Beach	667,536	21,533	21,773	28,516
Inglewood	499,852	16,124	15,267	17,183
Lawndale	9,326	301	366	346
Long Beach	2,665,528	85,985	87,919	95,118
Los Angeles-Salt Lake	42,095	1,358	1,443	1,500
Montebello	217,156	7,005	7,144	7,129
Newport	1,051	34	37	40
Playa Del Rey	901,554	29,082	30,718	2,495
Potrero	17,019	549	618	2,410
Richfield	212,954	6,870	6,893	9,457
Rosecrans	115,650	3,731	3,522	6,923
Santa Fe Springs	2,233,232	72,040	71,647	119,995
Seal Beach	428,770	13,831	15,260	21,942
Torrance	192,719	6,217	6,331	11,379
Whittier	41,230	1,330	1,212	1,429
Total May	16,448,960	530,612	526,785	614,327
Total April	15,803,541	526,785	.....	.....
Increase	645,419	3,827	.....	.....

PACIFIC COAST TERRITORY PETROLEUM STOCKS

	May 31, 1931	April 30, 1931	May stock decreases	May 31, 1930
Heavy crude, heavier than 20° A.P.I., including all grades fuel	105,316,997	105,844,270	527,273	112,777,460
Refinable crude, 20° A.P.I., and lighter	43,453,961	42,928,028	*525,933	43,749,958
Finished gasoline, engine distillate and natural gasoline	16,209,373	16,975,380	766,007	18,635,346
Naphtha distillates	2,922,505	3,191,183	267,678	3,022,565
All other stocks	7,808,464	8,213,504	405,040	9,546,205
Total all stocks	175,712,300	177,152,365	1,440,065	187,731,534

*Increase.

OIL FIELD DEVELOPMENT

	New rigs up	Active drilling	Completed	Daily initial output	Active producing	Aband. wells—Drillers	Aband. wells—Producers
Group No. 1—							
Buttonwillow gas field	...	1	...	.....	.....	...	...
Coalinga	...	1	...	.....	695	...	...
Elk Hills	...	...	...	.....	206	...	...
Fruitvale	...	...	...	.....	18	...	...
Kern River	...	...	...	.....	923	...	...
Kettleman Hills	...	18	3	31,370	12	...	...
Lost Hills-Belridge	...	8	...	.....	172	...	...
McKittrick	...	...	...	.....	135	...	1
Midway-Sunset	...	3	1	115	1,839	1	...
Mount Poso	1	1	2	400	64	...	...
Round Mountain	1	2	...	.....	2	2	...
Wheeler Ridge	...	...	...	.....	34	...	2
Group No. 2:							
Capitan	...	2	...	.....	.....	...	...
Elwood	...	2	...	.....	39	...	...
Rincon	...	3	1	927	32	...	...
Santa Barbara	1	3	...	.....	3	...	...
Santa Maria	...	1	...	.....	171	...	2
Summerland	...	...	...	.....	97	...	...
Ventura Avenue	3	8	4	2,930	145	...	...
Ventura-Newhall	...	6	2	370	408	2	...
Watsonville	...	...	...	.....	6	...	...
Group No. 3—							
Coyote	...	5	...	.....	169	...	...
Dominguez	...	...	...	.....	54	...	...
Fullerton	...	2	...	.....	350	...	...
Huntington Beach	...	...	...	.....	360	...	1
Inglewood	1	1	...	.....	207	...	...
Lawndale	...	...	...	.....	7	...	...
Long Beach	1	18	5	2,915	890	...	2
Los Angeles-Salt Lake	...	...	...	.....	262	...	...
Montebello	...	1	...	.....	172	...	...
Newport	...	1	...	.....	4	...	...
Playa Del Rey	...	9	7	4,728	176	2	1
Potrero	...	1	...	.....	13	...	...
Richfield	...	...	...	.....	149	...	4
Rosecrans	...	1	...	.....	81	...	...
Santa Fe Springs	...	1	1	985	454	...	...
Seal Beach	...	1	...	.....	104	...	2
Torrance	1	4	1	175	374	...	1
Whittier	...	...	...	.....	173	...	...
Miscellaneous drilling	7	136	...	.....	.....	6	...
Total May	16	240	27	44,915	8,995	13	16
Total April	27	269	17	16,653	9,130	18	12
Decrease	11	29	*10	*28,262	135	5	*4
Average for year 1930	80	434	63	48,710	9,632	21	27
Average for year 1929	109	610	76	100,635	10,550	26	18
Average for year 1928	107	520	59	56,802	10,823	15	25
Average for year 1927	97	404	75	39,992	11,276	23	21
Average for year 1926	95	422	76	32,635	11,288	24	17

*Increase.

PARAFFINE CRUDE OILS AND PREMIUM GASOLINES

(Continued from Page 16)

method were made on Mount Pleasant topped crude of 34.5° A.P.I. gravity. Yields of over 62 per cent of cracked gasoline, based on the charge, were obtained and the motor fuels had knock ratings of 53-54 per cent benzol equivalent corresponding to 67-68 octane number.

The cracking stock had the following properties and distillation characteristics:

Gravity	34.5
Initial	325
Endpoint	Over 760
Flash point[1]	140
Fire point[1]	160
Flash point[2]	130
Furol vis.[3]	11
Per cent sulphur	0.21
Cold test, ° F.	20
Per cent b.s.&w.	0.4

Per cent distilled over—	Temp, ° F.
10	396
20	424
50	593
90	721
95	760
Per cent distilled over	97.5
Per cent coke	2.6
Per cent at 410° F.	13.5
Per cent at 437° F.	21.5
Per cent at 572° F.	47.5

[1]Cleveland open cup. [2]Pensky Martin. [3]At 77° F. (sec.).

Three cracking tests were made on this topped crude oil under pressures of 250-300 pounds per square inch and at a temperature of 945° F. The percentage yields of products, based on the charge, produced from these operations are tabulated below:

Test No.—	1	2	3
Gasoline (per cent of topped crude)*	62.3	63.6	62.5
Residuum (per cent of topped crude)	30.6	33.8	28.0
Coke, gas and loss (per cent of topped crude)	8.2	3.9	12.2
Gas (cu. ft. per barrel of charge)	391	458	437

*Includes gasoline from gas.

The motor fuel obtained by cracking Mount Pleasant topped crude distilled as follows for the three runs:

Test No.—	1	2	3
Gravity	60.9	61.2	60.5
Initial	94	86	94
Per cent distilled over—	Temp, ° F.		
20	192	172	184
50	284	269	272
90	400	367	373
End b.p., ° F.	404	388	389

The knock ratings of these cracked gasolines were measured in the Ethyl Gasoline Corp. new "Series 30" motor. The cracked motor fuels from Tests 1 and 2 had a knock rating of 54 per cent benzol equivalent, corresponding to a 68 octane number. The gasoline from Test 3 had a benzol equivalent of 53 per cent, corresponding to an octane number of 67.

Flashed Residue

The flashed residue from the cracking of Mount Pleasant topped crude oil is an excellent fuel oil. The residues produced vary in gravity from 10.0 to 12.3° A.P.I. Their properties are summarized in the following table:

Test No.—	1	2	3
Gravity	11.0	12.3	10.0
Per cent b.s.&w.	0.4	0.6	0.3
Vis. at 122° F.	27	20	36
Flash C.O.C.	190	180	195
Fire C.O.C.	280	270	285
Flash point (Pensky Martens)	165	155	175
Cold test, ° F.	(*)	(*)	(*)
Initial	412	414	395
Over at 572° F.	18.5	24.0	17.0

*Below 0.

Gasoline with an endpoint of 437° F. made from Muskegon crude required the addition of 37 per cent of benzol to give it a knock rating equivalent to ordinary Pennsylvania straightrun gasoline. In other words, it had a benzol equivalent of minus 37 per cent.

Four hundred endpoint gasoline had a benzol equivalent of minus 32 per cent, and the 375 endpoint product minus 18 per cent.

Analyses of Michigan Crude Oils

A number of crude oils from various fields and levels in Michigan were analyzed for gasoline, kerosene, gas oil, lubricating oil, cylinder stock, wax distillate and residues. The properties of these crudes are summarized in Table 1.

The gasolines from the distillation of these crudes range in gravity from 55.6° to 63.3° A.P.I. and show an average color of 25. They are all poor in knock rating, the best, from Traverse crude, having a benzol equivalent of zero and the lowest, from Mount Pleasant, having a benzol equivalent of minus 32 per cent. "Kerosene distillates" from Mount Pleasant crude and from crudes of Monroe and Shiawasee Counties show gravities of 44.5°, 42.4° and 39.4° A.P.I., respectively. The boiling range for the Mount Pleasant product is 420° to 493° F., with flash point at 197° Tag. The kerosene distillate from Monroe County boils between 430° and 640° F. and has a flash point of 132° Tag. The third kerosene has a boiling range from 416° to 586° F. and flashes at 205° F.

The gas oils from these three crudes have the following characteristics:

	Mt. Pleasant	Monroe	Shiawasee
Gravity	37.6	36.4	35.5
Initial	...	504	482
Flash point	260	270	260
Fire point	290	315	280
Pour	...	45	50

One of the oils from Muskegon Dundee sand and the oils from Monroe and Shiawasee Counties were analyzed for lubricating qualities. The properties of lubricating oil distillates from these crudes are tabulated below:

LUBRICATING OIL DISTILLATES

Non-Vis. Distillate

	Muskegon	Monroe	Shiawasee
Gravity	27.3	32.2	32.5
Flash point	...	360	310
Fire point	...	405	345
Col., N.P.A.	...	3	2½
Vis.[1]	74	86	55
Pour	...	75	55

[1]At 100° F. (sec.).

Mid-Vis. Distillate

Gravity	25.9	29.2	29.0
Flash point	...	430	380
Fire point	...	495	410
Col., N.P.A.	...	5	3
Vis.[1]	139	234	112
Pour	...	95	75

[1]At 100° F. (sec.).

Cylinder Stocks

Gravity	18.6	20.4	...
Flash point	525	585	...
Fire point	590	675	...
Color	Dk.green	S.R.green	S.R.green
Vis.[1]	139	...	...
Vis.[2]	...	254	128
Pour	35	35	100
Concardson carbon	...	...	2.85

[1]At 100° F. (sec.). [2]At 210° F. (sec.).

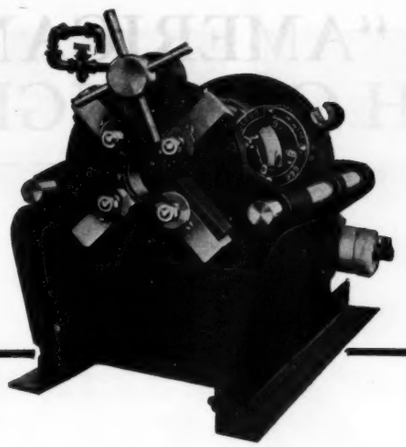
SERIES ON REFINING

The accompanying article is one of a series appearing exclusively in The Oil and Gas Journal explaining products and yields to be expected in refining representative grades of domestic and foreign crude oils.

Similar discussions published in previous issues are as follows:

June 18, page 22.—Van, Tex.
May 21, page 40—Joiner, Tex.
April 23, page 30—"Unrefinable crude oils."
April 16, page 30—Mid-Continent.
April 16, page 30 — Pettus, Tex.
April 16, page 30—Kentucky.
April 2, page 30—West Texas.
March 5, page 88—Oklahoma City.
February 19, page 30—South Texas crudes.
February 12, page 38—Pennsylvania.

Additional analyses will appear in later issues.



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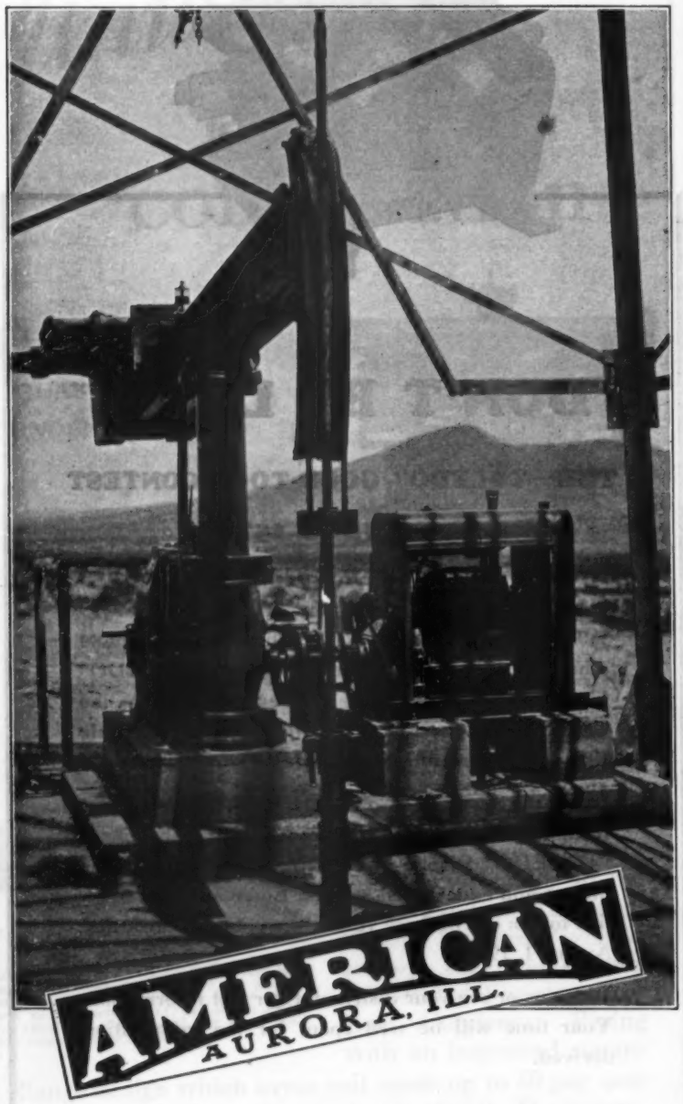

PICTURED is an "American" No. 4-A Fig. 1822 oil well pumping unit direct connected to a gasoline engine.

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ATTENTION TO DETAILS IMPORTANT IN WELDING OF ALLEGHENY METAL

By G. Van Dyke
Manager Special Steel Department, Joseph T. Ryerson & Son, Inc.

Allegheny metal is a chrome-nickel iron alloy containing approximately 18 per cent chrome, 8 per cent nickel and small amounts of manganese and silicon. The carbon in this alloy will vary from 0.15 to 0.06, depending on the class of work for which it is to be used, and also the method of manufacture by which it is to be fabricated. Because this particular type of alloy lends itself readily to welding by the electric, gas or spot processes, its production has opened up a large field of application.

Of all the various analyses of "stainless steel" which have been produced, the 18-8 type is the most useful, and finds the widest application not only because of its weldability but because it presents the greatest resistance to the greatest variety of corrosive attacks.

It must be borne in mind that no material which so far has been produced is really stainless in the true sense of the word. Glass, gold, silver, lead, hard rubber, stone and any other known material can be attacked and corroded by one or more chemical reagents.

In determining the value, therefore, of 18-8 or any other corrosion resisting alloys for a certain application, the metal should not be called upon to resist all types of corrosion, but rather should the question be raised as to whether the metal is sufficiently resistant to corrosion satisfactorily to take care of the particular job under consideration.

Care in Manufacture Important

The corrosion resistance of an alloy depends not only on its composition but also on the care taken in its manufacture and upon its structure. Bearing this in mind, it is very important that the welding of this alloy should be done in such a way that neither the analysis nor the structure of the metal will be changed; and for this reason, the chemistry of the flame in gas welding is of vital importance.

The first consideration in gas welding Allegheny metal is to get the proper mixture of acetylene and oxygen. If an excess of oxygen is used, it will burn up or oxidize a considerable portion of the chromium, and this not only changes the analysis of the metal but produces oxides of chromium which will cause the metal to boil and produce welds which are porous and of low corrosion resistance value. If an excess of acetylene, which is a compound of hydrogen and carbon, is used, the molten metal will absorb a certain amount of the gas and the carbon content of the weld thereby will be raised. This increase in carbon content is detrimental to the corrosion resistance and produces a brittle weld.

From what we have said it would appear that an exactly neutral flame with neither an excess of acetylene or oxygen would be desirable, and if it were possible to get such a flame, it would probably be ideal. In actual practice, regulators are not sufficiently accurate to produce a truly neutral flame and, therefore, the lessor of two evils must be chosen, and the flame should be adjusted so as to give a slight excess of acetylene which is indicated in the flame by short "feather tips" on the end of the combustion buttons.

Torch Should Be Held Close

In gas-welding this alloy the torch should be held as close to the metal as possible, so as to push the flame down into the weld; and the rod should be held above the weld so that it will melt and drop down as you go along. Puddling should be avoided, as it tends to produce a porous weld. If the flame is adjusted properly and sufficient heat is used, the Allegheny metal rod will melt freely and will drop down in clean drops.

I would recommend the use of a tip one or two sizes smaller than would be used on the same gauge of steel and in most cases, about 5 pounds pressure on both the acetylene and oxygen will be found sufficient.

It is essential that accurate regulators be used so that a uniform mixture can be maintained continuously.

In electric welding Allegheny metal by the metallic arc process, we do not have to concern ourselves with flame chemistry as we do in gas welding. It is important, however, that the rod be of the right analysis and that the coating on the rod be of such a character that it will produce sound welds, deep penetration and a bead of equal corrosion resistance to the parent metal. The production and coating of the rods is a technical matter which is best left to the manufacturers of the metal, and if any good operator will bear the points mentioned in this article in mind, he will be able to produce a good job.

In the first place reversed polarity should be used. That is to say, the electrode should be connected to the plus pole of the generator and the work or ground connected to the negative pole of the generator. It is well to use rather less power than would be used on a similar gauge of steel, although this is a point which is best worked out by each operator himself. Some men can weld more rapidly than others and, therefore, can use a greater amount of heat. After a little experience each operator will find the best voltage and amperage setting for his particular machine on various gauges.

Should Have Flexible Controls

A welding outfit should be provided which has flexible controls because variations in voltage and amperage are rather critical on this alloy.

A short arc should be used partly because it will give a more uniform penetration and partly because with a short arc there is less chance of the molten metal becoming oxidized and thus producing porous welds.

Backing up is to be recommended where possible and in each case, the operator should be provided with samples on which to experiment for power adjustment and arc length before he starts on any job.

The scale produced on these welds is usually heavy and hard, and it would be found helpful if the scale were ground off the bead left by one rod before starting the continuation of the weld with the next rod.

There are certain general principles concerning all types of welding on Allegheny metal and I would like, therefore, to offer the following for your very careful consideration:

In the first place, when this metal is heated to any temperature in excess of about 500° F., it will discolor or oxidize on the surface. This oxidization must be entirely removed as it will rust rapidly, and the rust will spoil the appearance of what might otherwise be a good piece of work. Oxidization can be removed by grinding, or it can be taken off by the application of a mixture of one part commercial nitric acid to one part of commercial hydrochloric acid. This acid mixture is extremely powerful and should only be left on the metal for a sufficient length of time (probably a few minutes) to remove the discoloration. It is absolutely essential that every trace of the acid be removed from the metal first by washing with water, and then following this, by a thorough washing with soap and water in which has been dissolved some sal soda, ammonia or other alkali.

Right Structure Essential

If Allegheny metal is to be used to resist severe corrosive attack, then it is essential that it should have the right metallurgical structure, this term meaning that the carbon should be in solution in the iron and not in the form of carbides which are chemical combinations of iron and carbon.

It is unfortunately true that metals of the 18-8 type if heated to temperatures within the range of 550° to 1,550° F., will undergo, depending on the tempera-

(Continued on Page 78)

RELATION OF DESIGN TO GASOLINE PERFORMANCE

(Continued from Page 16)

automotive fuel systems, the former quantity could be included in the finished motor fuel. This would mean that the supply of motor fuel could be greatly increased by the simple and cheap expedient of changing the "plumbing" of the automobile fuel lines. The additional volume of butane that can be marketed in a gasoline due to better designed fuel systems of the automobiles does not represent the entire increase in gasoline that would result, since not only the volume but also the quality of the gasoline is increased. For the same quality, as judged by volatility, which is the chief property of the gasoline, the increase in production would be approximately twice that represented by the amount of butane that could be added.

There is shown in Table 4 for the years 1920, 1925 and 1930 the proportion of the motor fuel supplied by the straightrun, cracking and natural gasoline recovery processes. Table 5 shows the estimated composition and vapor pressures of motor fuel marketed during the same years. These two tables represent estimates based upon information obtained from reports of the United States Bureau of Mines.

Permissible Vapor Pressure

The first three columns of Table 6 show Doctor Bridgeman's maximum permissible vapor pressures for "average" cars and "best" cars. The last three columns of the table show the butane content possible under the temperature conditions shown in Column 1. By improving fuel systems from the "average" condition to the "best" condition, it would be possible to use all of the available butane, even in the hot summer months. How critical this condition is, is shown by the fact that with "average" cars it is not possible to use the maximum available butane unless the fuel is to be used at temperatures below 60° F. On the other hand, with "best" cars the maximum available butane can be used at temperatures lower than 95° F.

In conclusion, it may be stated that the only thing that the petroleum industry is able to do in the matter of cooperating to eliminate vapor lock is to market gasolines with vapor pressures low enough to give satisfactory performance under the conditions imposed by the automotive engineer. It is true that vapor lock has occasionally been encountered with some gasolines on the market, and that some makes of cars will vapor lock during hot summer operating conditions with practically all gasolines, but vapor lock experiences are comparatively rare. The gasoline marketer can not afford to sell an unsatisfactory motor fuel in this respect, since it would not be favorably received by the motoring public and he would therefore be unable to retain his business. I am sure that the automotive engineer agrees with this simple deduction, since otherwise it would be just as logical to assume that the automobile manufacturer could afford to place cars on the market that would continually require attention on the part of the repair man. Evidently then the motor fuel manufacturer has done all that he can do with the vapor lock problem. His contribution has been to throw away the most valuable portion of his product and upon which practically all the motor fuel manufacturing costs have already been encountered. The butane fraction, which is in reality the cream of the motor fuel, is to a large extent being forced into the low grade fuel market in competition with coal, coke and gas oil. There is nothing further that the petroleum industry can do. It is up to the automotive engineer to finish the job.

TABLE 3—BUTANE SUPPLY AND ITS EFFECT UPON THE VAPOR PRESSURE OF MOTOR FUEL

Butane content %	Reid vapor pressure (lbs.)	*(M. gals.)
0	3.3	7,000
2	4.9	5,900
4	6.5	4,800
6	8.0	3,700
8	9.5	2,600
10	11.0	1,500
12	12.4	400

*Estimated daily butane being wasted at refineries and natural gasoline plants.

TABLE 4—SOURCE OF MOTOR FUELS IN PERCENTAGE OF TOTAL

Year—	Straight-run	Cracked	Natural
1920	78.9	13.6	7.5
1925	66.1	24.0	9.9
1930	51.1	37.2	11.7

TABLE 5—ESTIMATED COMPOSITION AND VAPOR PRESSURE OF MOTOR FUELS

Year—	Estimated butanes and lighter	Estimated pentanes and lighter	Estimated Reid vapor pressure
Winter Fuels			
1920	3.7	10.6	6.2
1925	5.4	12.8	8.3
1930	6.7	16.5	10.0
Summer Fuels			
1920	3.1	8.6	5.2
1925	4.5	11.2	7.1
1930	5.3	14.3	8.4

TABLE 1—PROPERTIES OF VOLATILE FRACTIONS OF MOTOR FUEL

Fraction—	Sp. gr.	Theoretical vapor pressure at 100°F. (lbs./sq. in. abs.)	Increase in Reid vapor pressure due to presence of 1% by vol. (lbs./sq. in. @ 100°F.)	Percentage present in average motor fuel by vol.	Lowest easy starting temp. °F.	Octane number	Percentage that can be included in 12-lb. R. V.P. motor fuel if fractions more volatile are absent
Propane	.509	187	2.46	0.3	—137	(*)	....
Iso-butane	.564	73.9	....	....	—100	100	....
N-butane	.584	52.4	....	....	— 32	90	....
Butanes	.581	55.7	0.6	4.7	— 90	93	14.2
Iso-pentane	.625	20.4	....	....	— 49	91	....
N-pentane	.631	15.6	....	....	— 37	64	....
Pentanes	.628	16.5	0.13	9.4	— 45	74	51
N-hexane	.663	4.9	(†)	....	+ 7	‡35	100
Hexanes	.669	8.3	(†)	12.1	— 20	63	100
N-heptane	.688	1.6	(†)	....	+ 44	0	100
Heptanes	.724	2.9	(†)	13.0	+ 22	65	100

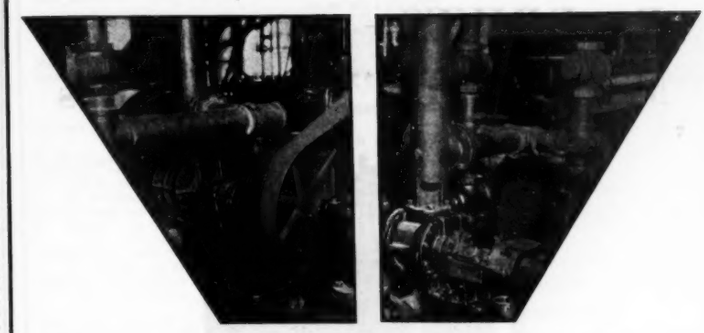
*Considerably better than iso-butane. †Negligible. ‡Estimated.

TABLE 2—EFFECT OF BUTANE UPON PERFORMANCE CHARACTERISTICS OF GASOLINE

Property—	Butanes content, per cent by volume— 0%	5%	10%	15%	20%
Reid vapor pressure in lbs./sq. in. @ 100° F.	3.3	7.3	11.0	14.5	17.8
Vapor lock temperature, °F.	237	197	159	124	92
Lowest atmospheric temp. giving easy starting, °F.	+50	+30	+3	—30	—50
Lowest atmospheric temperature giving satisfactory acceleration with choke, °F.	85	75	68	60	52
Octane number	55	57	59	61	63

TABLE 6—DOCTOR BRIDGEMAN'S VAPOR PRESSURE LIMITS IN TERMS OF BUTANE INCLUSION AND MOTOR FUEL SUPPLY

Atmos. temp.	Maximum Reid vapor pressure Average cars	Best cars	Butane content of motor fuels Average cars	Best cars	Per cent increase in motor fuel supply
100	6.7	11.4	4.4	10.6	7.2
90	7.9	13.4	5.9	12.4	8.7
80	9.4	15.9	7.8	17.1	11.3
70	11.0	18.7	10.0	21.5	14.7
60	13.0	22.0	12.8	28.5	22.0



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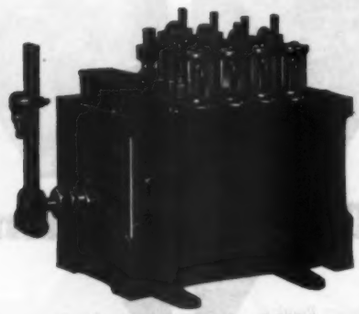

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DETROIT MICHIGAN

PIPE LINE WELDERS ARE RESOURCEFUL

Welded pipe sled used by welders along the new pipe line of the Sinclair Pipe Line Co. in Rusk County, Texas. This sled can be pulled over very rough ground by the small tractor and provides a safe and cheap method of transporting gas tanks and other equipment along the right of way.

EASTERN FIELDS

(Continued from Page 50)

and others have cleared a location on the William Wilson lease.

SOUTHWEST PENNSYLVANIA

No wells were completed in southwest Pennsylvania during the week. The majority of the large producers are strictly adhering to the curtailment program and are not exceeding the 70 per cent production allowed, with both gas and oil surplus.

The test of the T. W. Phillips Gas & Oil Co. in Buffalo Township, Butler County, and on the Johnson Elsenrath farm, which was reported in last week, is maintaining a daily average of about 75 bbls. from the Fifth sand. This district produces a bright amber oil but unusually heavy in wax, almost to the point of being detrimental.

CENTRAL WEST FIELDS

(Continued from Page 53)

boro Messenger. The announcement of the pipe lines meets with the approval of the smaller operators, many of whom will begin pumping their wells to capacity immediately.

According to William F. McCray, manager of the Illinois Pipe Line Co., and J. Frank Wilson, manager of the Producers line, no new wells will be connected in the field unless the demand for oil increases. This will in effect continue the curtailment policy which has been in effect in the field for more than a year.

Early this year, due to the general overproduction of oil, the pipe lines serving Ohio, Daviess, Hancock, McLean, Muhlenberg and Henderson Counties cut the oil they would take from each well to one-third of the amount that could be pumped. One month ago, the amount which would be accepted was increased from a third to 50 per cent, which gave some relief to the smaller operators. At this time oil was selling at 75 cents a barrel. Since then another cut of 25 cents a barrel has been made, bringing the price to the present low level.

Late Completions

Owing to prevailing conditions very few wells are being brought in in any part of Kentucky. But three new completions were forthcoming for the week, two in McLean and one in Ohio County.

In McLean County, near the town of Island, the Louisville Gas & Electric Co. is reported to have brought in two producers, one being on the Hollis Howard farm, for 30 bbls. initial and a 35-bbl. initial producer on the J. E. Howell farm, and 600 feet east of the Hollis Howell well, at a depth of 1,671 feet.

The Kentucky Natural Gas Co. reports a dry hole in No. 8 on the J. T. Griffith farm, in the Reynolds Pool of Ohio County, at a total depth of 514 feet.

J. B. Taylor and others are drilling on the J. P. Howard farm, in the Crow Pool of Daviess County.

ATTENTION TO DETAILS IMPORTANT IN WELDING

(Continued from Page 74)

ture, a structural change in which some of the carbon will be precipitated from solution and be converted into an iron carbide, or perhaps an iron chromium carbide. These carbides accumulate along the grain boundaries of the metal, and if the metal is then subjected to heavy corrosive attack such as nitric acid, hot salt water, copper sulphate solution and so forth, electrolytic effect is developed which will rapidly corrode and destroy the metal.

It is obvious that in welding the metal is at some point heated to these temperatures and, therefore, there is always an area adjacent to the weld which will have a lower corrosion resistance than the parent metal. This change of precipitation does not occur instantaneously but requires a certain amount of time to develop. It is obvious that because a No. 24 gauge sheet will cool more rapidly than a quarter-inch plate, that precipitation is less likely to occur in light gauge work than in heavier thicknesses.

Each Application Must Be Studied

Each application must be considered from the standpoint of the degree of corrosion and also the probability of carbide precipitation which in turn is governed by the technique of welding and also the thickness of the parts which are welded.

It should be noted that where carbide precipitation has occurred, it can be eliminated by heating the metal to a temperature of about 1,950° F., which heating should be followed by a cooling sufficiently rapid to prevent further precipitation. The method of cooling will depend, of course, on the thickness of the section and the details of such operations should be discussed with the manufacturers of the metal.

Metals of the 18-8 type will expand when heated about 50 per cent more than steel, and the heat conductivity is only about one-half that of steel. These two factors tend to make the metal warp more than steel and this point must be taken into careful consideration in all welding jobs. Jigs must be used to hold warpage within practical limits.

Welds in Allegheny metal are extremely tough, and any welds made on metal about 10 gauge or lighter should stand bending flat on themselves without fracturing.

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

(Continued from Page 38)

Sauldin et al's No. 1 Kimball, 300 ft. S Grayburg's No. 1-A Kimball, S. Winship Sur. ..... T. D. 3,544 ft.; fishing.

BEXAR COUNTY

Ingersoll-Mitchell's No. 2 E. B. Carruth, 750 ft. S of No. 1 ..... T. D. 620 ft.; drlg.
Schneider, Rees et al's No. 2 Claussen, 12 miles NE of San Antonio ..... T. D. 850 ft.; drlg.

CALDWELL COUNTY

Mills et al's No. 1 McMahon, 275 ft. SW line, 75 ft. SE line of tract, J. Pinchback Sur. ..... T. D. 2,490 ft.; fishing.
M. O. Rayor's No. 1 Dunlap, 150 ft. NW and NE lines of farm, Solomon Seal Sur. ..... T. D. 2,480 ft.; made head of oil; going on pump.
R. R. Ogden's No. 1 O. S. Alexander, 1,300 ft. from N line, 150 ft. from E line of S. Spiller Sur. ..... T. D. 2,353 ft.; trying to pull packer.

COMAL COUNTY

Caldwell & Lanier's No. 1 T. J. Byler, 175 varas from W line, 370 varas from N line of 320-ac. tract in the H.E.&W.T. No. 5,894 Sur. ..... T. D. 695 ft.; drlg.

DEWITT COUNTY

Gibson & Sturm's No. 1 Clark, Dolores Alderete Sur. .... Rigging up.

DUVAL COUNTY

Coffee et al's No. 1 Jose Garza, center Sur. 49 ..... T. D. 900 ft.; changing rig.
O'Byrne et al's No. 1 Well, B.S.&F. Sur. No. 668 ..... T. D. 2,632 ft.; shut down.
S. J. Carpenter et al's No. 1 Juan Benavides, Blk. 33, Mesquite grant ..... T. D. 1,712 ft.; standing.
Southern Crude Oil Pur. Co. and Camp's No. 1 Hubbard, 1,650 ft. from S line, 330 ft. from E line of Sur. No. 75 ..... Rigged up and laying water and gas lines.

FAYETTE COUNTY

Elam & Reynolds' No. 1 Florence, M. Muldoon Sur. No. 13 ..... T. D. 2,542 ft.; flowing fresh water.

GOLIAD COUNTY

V. F. Neuhaus' No. 1 J. E. Pettus, 4,750 ft. N, 28 degrees 20 minutes W of extreme SE cor. of 3,418-ac. tract in Maria de Jesus Ybarbo Sur. ..... T. D. 2,853 ft.; rigging up to deepen.

GUADALUPE COUNTY

Harry Bruner's No. 2 Jim Sherrill, 330 ft. from NW and SW lines of tract in George Allen League ..... T. D. 180 ft.; changing to rotary rig.
McGarrity et al's No. 1 A. Wesch, Jr., 150 ft. to N and E lines of farm, H. M. Thompson Sur. ..... T. D. 897 ft.; drlg.
Schleyer, Atherton and Armstrong's No. 1 Ogletree, Robert Smith Sur. ..... T. D. 1,745 ft.; drlg.
Linne et al's No. 1 J. E. Linne, center 263-ac. tract in V. Cortario Sur. ..... Moving in rig.
San Antonio Oil & Royalty Co.'s No. 1 Dibrell, 150 ft. from N and W lines of Sec. 6, H.&T.C.R.R. Sur. .... Location.
W. J. Walton's No. 1 Zoboroski, 700 ft. W line of tract, 500 ft. S of Guadalupe River, in Joseph D. Clements Sur. ..... T. D. 2,196 ft.; coring chalk; showing oil.

HAYS COUNTY

J. C. Jones et al's No. 1 Byder, John Ingram Sur. .... T. D. 900 ft.; drlg.

JIM HOGG COUNTY

Peterman & Minahan's No. 1 Palacios, Sur. No. 231 .... T. D. 1,360 ft.; shut down.
D. C. DeWitt's No. 1 Teofilo Gomez, 1,170 ft. from N line, 150 ft. from W line of Sur. 12 ..... T. D. 200 ft.; shut down.

JIM WELLS COUNTY

Carsil Oil & Gas Co.'s No. 3 McGill, 450 ft. S, 300 ft. E of No. 1 McGill in Wm. D. Baldwin Sur. ..... Ready to spud in.
Gulf Prod. Co.'s No. 1 Schaeffer, 632 ft. W of No. 1 Schaeffer in J. Doyle Sur. ..... Drilling water well.

KENDALL COUNTY

Borgett et al's No. 1 Haag, W. Avery Sur. ..... Dropped till work is resumed; T. D. 1,165 ft.
Dixon Oil Co.'s No. 1 Ottmar Behr, 823 ft. from S and N lines of Jessie Wilson Sur., 3 miles S of Sisterdale ..... T. D. 2,630 ft.; reaming.
Sitton et al's No. 1 Garvin, C of NE of D. L. Richardson Sur., in the D. L. Richardson Sur., 1 mile NE from Kendalia ..... T. D. 1,482 ft.; shut down.
Fred S. Dibble's No. 1 Eliebrach, Sur. 77, N part of county ..... Spudded in and shut down.
Hicks et al's No. 1 Speck & Wiedner, Thomas Sur. No. 27, 2 miles S of Twin Sisters ..... Location.

KERR COUNTY

Herbert Oil Co.'s No. 1 J. D. Witt, 1,320 ft. N line, 1,320 ft. W line of Sec. 1,923, W. H. Hamilton Sur.... T. D. 200 ft.; drlg.
Evans & Gant's No. 1 Selker-Mears, C.C.S.D.&N.G.R.G. Sur. No. 1,605 ..... T. D. 3,340 ft.; drlg. sand.
Evans & Gant's No. 1 E. Young, A. E. Burge Sur. No. 28 ..... T. D. 1,000 ft.; drlg.
Evans & Gant's No. 1 Love in J. Martines Sur. No. 1,594, 1,320 ft. from W line of survey and 660 ft. S of S line of Sur. No. 1,597 ..... T. D. 3,600 ft.; drlg. in sand.
Evans & Gant's No. 2 Love, 150 ft. to S and W lines of Sur. 1,593 ..... T. D. 100 ft.; drlg.
B. M. Hatfield's No. 1 Westland, Blk. 23, Westland Subd. to Kerrville ..... T. D. 460 ft.; standing.

KIMBLE COUNTY

C. L. Bryant et al's No. 1 Lambert, 7,700 ft. N and W lines of F. Lotta Sur. ..... T. D. 850 ft.; standing.
Kamon et al's No. 1 Hodges ..... T. D. 2,910 ft.; abnd. dry

KINNEY COUNTY

C. R. Cox et al's No. 1 Rose, 1,344 varas from NW line, 100 varas from SW line of A. B. Harper Sur. ..... Location.

KLEBERG COUNTY

Barbee & Hunter's No. 1 Finnegan, 150 ft. from N and W lines of El Pasodezo Sur., 3 miles S of Ricardo .. T. D. 2,270 ft.; drlg.

LAVACA COUNTY

F. P. Zoch's No. 1 Dobard, 950 ft. from N line, 150 ft. from W line of T. G. Western Sur. ..... T. D. 2,560 ft.; drlg.

LIVE OAK COUNTY

Henderson Coquat's No. 1 Hewitt ..... T. D. 54 ft.; set surface csg.

LEE COUNTY

Burt et al's No. 1 R. C. Saunders, J. Maxmillan Sur. .... T. D. 3,980 ft.; fishing for drill stem.
A. H. Wheeler and associates' No. 1 fee, Blk. 47, H. Donohue Sur. ..... T. D. 3,315 ft.; bailing.
C. B. Polk et al's No. 1 Stoltz, Hiram Donohue Sur. .... T. D. 2,300 ft.; shut down.

McLENNAN COUNTY

C. E. Groone et al's No. 1 League ..... T. D. 1,230 ft.; shut down.

McMULLEN COUNTY

Belt Pet., Inc.'s No. 1 Martin, 150 ft. NW line, 150 ft. to SW line of E. Melon No. 212 Sur. ..... T. D. 28 ft.; standing.
Whall, Scherer et al's No. 1 Shiner, Henry Brewer Sur... T. D. 2,008 ft.; shut down.

MEDINA COUNTY

J. H. Hickey's No. 1 Jungman, at N end Chicon Lake .... T. D. 565 ft.; shut down.
Sunflower Oil Co.'s No. 1 Mofield, J. Brothag Sur. No. 532 ..... T. D. 2,010 ft.; drlg.
F. E. Tegler's No. 1 J. P. Nixon, 600 ft. from W line, 584 ft. from N line of tract, near Ina Field ..... T. D. 883 ft.; set csg.
Yancey Development Co.'s No. 1 Fassler, Sur. No. 801 .. T. D. 1,827 ft.; drlg.

MILAM COUNTY

Dil-Tex Oil Corp.'s No. 1 Dilbeck, 450 ft. N and E lines of farm, Fernando Rodrigues Sur. ..... T. D. 2,425 ft.; shut down.
H. Elliott's No. 1 Kirkman, 150 ft. from NE lines of farm in M. Park Sur., NW from Gabriel ..... T. D. 1,650 ft.; in Edwards with sulphur water.
Red Bank Oil Co.'s No. 1 Foster, A. G. Berry Sur. .... T. D. 920 ft.; drlg.

NUECES COUNTY

Southern Crude Oil Pur. Co.'s No. 1 Charles E. Stratton, 1,650 ft. E line, 330 ft. S line of P. Sancho Sur. .... Spudded in.

REAL COUNTY

McGinley Corp.'s No. 1 Haby, C of SW Sec. 175 ..... T. D. 2,165 ft.; fishing.
Gant-Kilgore and Evans' No. 1 A. D. Auld, C.C.S.D.& N.G.R.G. Sur. No. 23 ..... T. D. 4,007 ft.; fishing for bailer; will deepen.

SAN PATRICIO COUNTY

United Production Co.'s No. 1 Mayfield ..... T. D. 1,640 ft.; drlg.

STARR COUNTY

B. B. Tips' No. 1 F. Dayno, Lot 1, Porcion No. 81 ..... T. D. 332 ft.; abnd.
Menyard et al's No. 1 Sealbury, 150 ft. from E line, 6,550 ft. from N line, Share 5, Porcion 75, Jurisdiction of Carmargo ..... T. D. 4110 ft.; abnd.
Los Olmos Oil Co.'s No. 5 Kelsey-Bass, 300 ft. N of No. 4 ..... T. D. 200 ft.; drlg.

TRAVIS COUNTY

Ratcliffe et al's No. 1 Jim Jones, 1,000 ft. S line, 750 ft. E line of farm in Amos Alexander Sur. ..... T. D. 305 ft.; abnd.
Waldron et al's No. 1 Cook, D. H. Minor Sur., 8 miles SW of Austin ..... Dropped till work is resumed.

WEBB COUNTY

Cole Pet. Co.'s No. 4 Benavides, Sur. No. 1,601 ..... T. D. 2,600 ft.; drlg.
Eugene Garner, Jr.'s No. 1 Billings, 411 ft. E line, 956 ft. N line of NW NE, Sur. 71 ..... Building derrick.

WILLIAMSON COUNTY

Hays & Gee's No. 1 E. G. Johnson, 1,800 ft. from N line, 170 ft. from E line of tract in B. C. Low Sur., S of Georgetown ..... T. D. 725 ft.; drlg.
Wilburn et al's No. 1 Caroline Hurts, P. Coursey Sur. .... T. D. 1,327 ft.; shut down.
Wilson et al's No. 1 Walker ..... T. D. 2,260 ft.; shut down.

WILSON COUNTY

A. M. Blume's No. 1 Nickolson, C. Diaz Sur. ..... T. D. 925 ft.

ZAPATA COUNTY

T. H. Ward's No. 1 Uribe, 150 ft. NW line, 150 ft. SW line, Blk. 8 Subd., Share 7, Partition No. 6, T. Uribe Partition of Jose V. Borrego Sur. ..... Rigged up and standing.
Bill Henry et al's No. 1 Gopher Trust estate, Borrego grant ..... T. D. 1,365 ft.; standing.
Penny Prod. Co.'s No. 1 Juan V. Cuellar, Jr. et al, 175 ft. NE line, 175 ft. SE line Poppas Subd., Porcion 33 and 34, Blk. 1, Sur. 2 ..... T. D. 2,035 ft.; drlg.
National Oil Co.'s No. 1 Zapata Trust Estate, 617 ft. NW line, 96 ft. NE line, Blk. 97, De Prom Subd., Porcion 6 ..... T. D. 690 ft.; drlg.
National Oil Co.'s No. 2 Adams, 150 ft. from NW line and SW line, Blk. 11, Borrego grant ..... T. D. 1,320 ft.; drlg.

ZAVALA COUNTY

Lloyd North's No. 1 Mrs. Clay West Burns, 1,750 ft. N line, 3,100 ft. W line of 500-ac. tract in Sur. No. 200.. T. D. 1,140 ft.; drlg. in Serpentine.

SOUTHWEST TEXAS PROVEN AREAS

(Continued from Page 38)

Houston Oil Co.'s No. 23 Cartwright, 691 ft. N, 30° E of No. 11 ..... T. D. 3,565 ft.; swabbed 77 bbls. in 2½ hours; going on pump.

CHITTIM POOL—MAVERICK COUNTY

Texas Gas Utilities' No. 8 Chittim, 24 ft. S of No. 7 Chittim ..... T. D. 3,127 ft.; drlg.

SAXET FIELD—NUECES COUNTY

Gulf Coast Oil Co.'s No. 1 Maggie Harrall, 330 ft. from S and W lines of Blk. 32, Sec. 311 ..... T. D. 4,095 ft.; comp. big gasser spraying oil.
Houston Oil Co.'s (Andy Bowen) No. 1 Prieur, H. B. Sheppard Sur. ..... T. D. 1,465 ft.; to be deepened.
Houston Oil Co.'s No. 1 Lawrence ..... T. D. 2,740 ft.; trying to get in with tools; heavy gas.
Houston Oil Co.'s No. 2 Rand Morgan ..... T. D. 5,850 ft.; cored sand.
L. L. Smith's No. 1 Hunter, 150 ft. from S and W lines of N half of Hunter tract ..... T. D. 5,388 ft.; plugged back to 3,320 ft. to test.

WHITE POINT FIELD—SAN PATRICIO COUNTY

Saxet Oil Co.'s No. 4 White Point ..... T. D. 5,750 ft.; perforating csg. at 3,189 to 3,209 ft.; testing.

LAREDO DISTRICT

KOHLER POOL—DUVAL COUNTY

Humble Oil & Refining Co.'s No. 50 Kohler, 2,805 ft. from S line, 165 ft. from W line of Sur. 164..... T. D. 6,696 ft.; drlg.

COLE POOL—DUVAL COUNTY

Magnolia Pet. Co.'s No. 1 W. Benavides, 330 ft. from N and W lines, Sur. 172 ..... Drlg. 2,465 ft.; comp. 35,000,000 ft. gas.

COLE POOL—WEBB COUNTY

F. P. Zoch and Trinity Drillers' No. 1 Cuellar, 1,200 ft. from NW and SW lines of Share No. 2, W of Bruni.. Set surface casing.

JENNINGS-MUCKELOY POOL—ZAPATA COUNTY

E. C. Brogan's No. 2 Montemayor, 450 ft. from N line, 150 ft. from W line of Blk. 11, Sur. 64 ..... T. D. 1,505 ft.; abandoned.
Pray & Chamberlain's No. 5 Garza, 750 ft. to NW line, 450 ft. to NE line, Blk. 1, Zorro Subd. of Comitas grant ..... T. D. 200 ft.; drlg.

CAROLINA-TEXAS POOL—WEBB COUNTY

George S. Marshall's No. 1 Benavides, 660 ft. from S line, 150 ft. from E line of Sur. 683 ..... Location.

GULF COAST FIELDS AND WILDCATS

(Continued from Page 40)

PIEBCE JUNCTION—HARRIS COUNTY

Rio Bravo Oil Co.'s No. 14-A Settegast (workover) ..... Sand and shale showing oil 5,375 ft.; comp. pumping 350 bbls. oil.
Rio Bravo Oil Co.'s No. 22-A Settegast, J. Kopman Sur. No. 44, 990 ft. S and 200 ft. W of NE cor. "A" lease.. Comp. dry gas well 4,187 ft.

LOST LAKE—CHAMBERS COUNTY

Pure Oil Co.'s No. 13 Mayes, B.B.B.&C. Sur. No. 4, 75 ft. W and 700 ft. S of NE cor. of survey ..... Anhydrite cap 5,490-5,560 ft.; abd.

PORT NECHES—ORANGE COUNTY

The Texas Company's No. 1 Polk-Kuhn-Glass, 260 ft. E and 1,545 ft. S of SW cor. Marshall Beauchamp Sur., in the T. J. Notgrass Sur. ..... Rig.
The Texas Company's No. 3 Kuhn, 587 ft. S and 150 ft. W of NE cor. of the Mary E. Hall Sur. No. 2 .... Location.

HIGH ISLAND—GALVESTON COUNTY

Yount Lee Oil Co.'s No. 21 Cade, Fitzsimmons Sur., 150 ft. W of No. 17 ..... Sand and shale showing oil 4,323 ft.; cem. 7⅝-in. casing; drilled plug.

HULL—LIBERTY COUNTY

Sun Oil Co.'s No. 8 Carr (D.D.), Jesse Devore Sur., 50 ft. from W line and 100 ft. from S line of tract ..... No report.
Weneedan Oil Co.'s No. 1 Palmer, Chas. Underton Sur., 150 ft. from N line and 200 ft. from E line of tract.. No report.

NORTH DAYTON—LIBERTY COUNTY

Harrison-Abercrombie's No. 2 Jones, H.&T.C. Sur. No. 135, 50 ft. from N line and 450 ft. from E line of tract ..... Drlg. shale 2,640 ft.

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IN ENGINEERING projects the beauty of the finished work often blinds our eyes to the contribution made by the men on the job. After all, the *human* side of engineering is very important. The way the workman does his work is sure to be reflected in the way the apparatus or the plant as a whole does its work.

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For fifty-two days these men worked together and ate together (the camp shown in the background was their home). Only for the loyalty and honest workmanship of these men, could so large a plant have been erected in so short a time.

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DAMON MOUND—BRAZORIA COUNTY

D. C. Wellock's No. 1 Hamon, John P. Mills Sur., 1,115 ft. NE line and 60 ft. W line Blk. 1 ..... Sandy shale 612 ft.

CLAY CREEK—WASHINGTON COUNTY

Sun Oil Co.'s No. 6 Jamer, J. F. Perry Sur., 600 ft. NW No. 5 and 1,200 ft. from SW line ..... Sand 1,288 ft.; comp. pumping 50 bbls. daily.

ESPERSON—LIBERTY COUNTY

Cranfill-Reynolds Oil Co.'s No. 7 Davis, David Kokernot Sur., 100 ft. S of No. 4 ..... Fishing 5,880 ft.

Cranfill-Reynolds Oil Co.'s No. 19 Esperson, C. W. Fisher Sur., 400 ft. E No. 9 and 550 ft. N No. 14..... No report.

ORANGE—ORANGE COUNTY

Gulf Prod. Co.'s No. 1 K. Kishi, J. Dyson Sur., 378 ft. from E line and 234 ft. from S line of tract ..... Drlg. gumbo 3,545 ft.

Jefferson Production Co.'s No. 1 Bland ..... Drlg. shale 2,358 ft.

HANKAMER—LIBERTY COUNTY

Gulf Prod. Co.'s No. 14 Boyt, H.&T.C. Sur. No. 22, 500 ft. N of No. 10 ..... Sand and shale 4,450 ft.

MOSS BLUFF—LIBERTY AND CHAMBERS COUNTIES

Humble Oil & Ref. Co.'s No. 7 Sterling, J. McFaddin Sur., 350 ft. S and 100 ft. W No. 6 Sterling ..... Set screen 6,426 ft.

REFUGIO—REFUGIO COUNTY

Houston Oil Co.'s No. 10 Wilson Heard, Refugio town tract, 150 ft. from N line and 150 ft. from E line of S 50-acre tract ..... Sand 3,650-57 ft.; set 1 jt. screen; comp. flowing 50 bbls. daily.

Houston Oil Co.'s No. 5 Mrs. M. H. Ryals, Refugio town tract, 150 ft. from N line of tract and 527 ft. east of No. 1 ..... Total depth 3,655 ft.; plugged to 3,649 ft.; set 22½ ft. screen in sand 3,624-48 ft.; comp. flowing 25 bbls. net oil, 30% salt water, 1,000 lbs. pressure.

Houston Oil Co.'s No. 6 Pratt-Hewitt-Rooke (D.D.), Thomas Mullen Sur., 1,150 ft. N and 200 ft. W of SE cor. of tract ..... Sand showing oil 3,705 ft.; 5 3/16-in. csg. at 3,678 ft. parted; to sidetrack.

Mission Drilling Co.'s No. 2 J. J. O'Brien, Refugio town 1½-acre tract ..... Drlg. lime and shale 5,705 ft.

tract, 150 ft. from E line and 150 ft. from S line

Moody-Seagraves Producing Co.'s No. 4 O'Connor, Refugio Town Tract, 150 ft. from N line and 1,282 ft. from W line of 60-acre tract..... Rig up to deepen 5,456 ft.

T. P. Morgan's No. 1 Lambert, Refugio town tract, 450 ft. from N line and 650 ft. from W line of 105-acre tract ..... Drlg. shale 3,850 ft.

Pearson Properties' No. 5 Ryals, 174 ft. from S line of lease and 475 ft. E of No. 3 ..... Drlg. hard sand 6,038 ft.

United Prod. Corp.'s No. 6 O'Brien, 150 ft. from S line of tract, 350 ft. W No. 3 ..... Coring sand 6,445 ft.

United Prod. Corp.'s No. 3 Mitchell, 150 ft. from N line and 609 ft. from W line of tract ..... Total depth 6,458 ft.; plugged to 6,425 ft.; perforated 5 3/16-in. csg. in sand 6,411-21 ft.; comp. gas well, 2,050 lbs. pressure on ¼-in. choke; shut in.

United Prod. Corp.'s No. 1-B W. J. Fox, Wm. Hews and L. Brown Sur., 2,541.7 ft. NE along SE line from SE cor. lease and 330 ft. NW at right angles ..... Drlg. hard rock 3,470 ft.

and L. Brown Sur., 2,514.7 ft. NE along NW line

United Prod. Corp.'s No. 4 M. F. Lambert, Wm. Hews from SW cor. lease and 330 ft. SE at right angles... Rig.

United Prod. Corp.'s No. 5 Holmes Heard, 660 ft. from N line and 2,375 ft. from W line, Blk. 3, town tract.. Sand showing gas 3,650-60 ft.; to test.

SOUTH LOUISIANA FIELDS
LOCKPORT—CALCASIEU PARISH

Vacuum Oil Co.'s No. 7 State, 319 ft. N and 260 ft. W SE cor. NE Sec. 8-10s-9w ..... Abd. in sandy shale 6,769 ft.

Vacuum Oil Co.'s No. 5-A Farquahar, 105 ft. S and 110 ft. E of NW cor. SW NE Sec. 8-10s-9w ..... Drlg. sandy shale 1,777 ft.

JENNINGS—ACADIA PARISH

Port City Oil Co.'s No. 13 Jennings-Heywood, 2,650 ft. NW of SE cor. N one-fourth of fractional Sec. 41 9s-2w, 675 ft. from the W line ..... Drilling.

Yount Lee Oil Co.'s No. 10 Housierre-Latrielle, Sec. 47-9s-2w ..... Rig.

EDGERLY—CALCASIEU PARISH

Rex Pet. Co.'s No. 2 Prairie Narroni, Sec. 21-9s-11w, 260 ft. from S line and 50 ft. from E line of lease ..... Total depth 4,143 ft. in salt; sidetracked to 4,060 ft.; set 10 ft. 3-in. screen; tested salt water; standing.

HACKBERRY—CAMERON PARISH

R. E. Seiss' No. 2 J. M. Vincent ..... Total depth in rock 2,042 ft.; cmtd. 6⅝-in. csg. 2,004 ft.

The Texas Company's No. 8 State ..... Derrick.

Yount Lee Oil Co.'s No. 34 State ..... Location.

Yount Lee Oil Co.'s No. 36 State ..... Location.

Yount Lee Oil Co.'s No. 37 State ..... Location.

Yount Lee Oil Co.'s No. 38 State ..... Location.

Yount Lee Oil Co.'s No. 39 State ..... Location.

VINTON—CALCASIEU PARISH

Marrs McLean's No. 1 Gray (D.D.), Sec. 33-10s-12w ..... Set 16 ft. 3-in. screen 2,695 ft.; comp. flowing 200 bbls. oil, total fluid showing 0.8% water.

Vinton Pet. Co.'s No. 7 Matilda Gray (D.D.), 157 ft. N and 674 ft. W of SE cor. SW NE of Sec. 33-10s-12w.. Set 15 ft. 3-in. screen 3,124 ft.; tested salt water; to deepen.

FORT BARRE—ST. LANDRY PARISH

The Texas Company's No. 10 Botney Bay, Sec. 4-6s-5e, 100 ft. S line and 100 ft. E line, Dan'el 55-acre tract.. Drlg. sandy shale 3,329 ft.

SWEET LAKE—CAMERON PARISH

Magnolia Pet. Co.'s No. 2 Sweet Lake, Sec. 5-13s-7w ..... Drlg. dry sand 5,420 ft.

Pure Oil Co.'s No. 5 Yount Lee (D.D.), Sec. 12-13s-8w ... Fishing screen and liner to deepen 5,658 ft.

SULPHUR—CALCASIEU PARISH

Union Sulphur Co.'s No. 767 fee, 328 ft. E and 180 ft. N of C Sec. 29-9s-10w ..... Drlg. 3,104 ft.

MISCELLANEOUS WILDCATS

TEXAS
AUSTIN COUNTY

Parmerson & Cafferkey et al's No. 1 W. N. Schlecte, John Fitzgibbons Sur., 1,850 ft. from SE line and 3,100 ft. from NE line of survey ..... Shut down 1,502 ft.

BRAZORIA COUNTY

The Texas Company's No. 1 Belcher, Manvel, 167 ft. SE of NW line and 223 ft. of NE of SW line, Lot 18, Blk. A, Suburban Gardens Subd. ..... Drlg. sand, shale and boulders 3,056 ft.

United North & South Oil Co.'s No. 1 Daisy B. Lewis, S. F. Austin 5 league, 568 ft. S and 325 ft. E from NW cor. 100-acre tract ..... Drill stem stuck 3,740 ft.

United Oil Syndicate's No. 1 Levitt, 900 ft. from W line and 400 ft. from S line of John Peske Sur. ..... Rig.

BURLESON COUNTY

Reynolds Oil Co.'s No. 1 Harris, 500 ft. from W line and 400 ft. from N line of J. M. McKean Sur. ..... Shut down 400 ft.

J. E. Stubblefield's No. 1 J. B. Mitchell, 81 ft. SW and 4,340 ft. SE of S cor. of Joseph Henson Sur., in A. T. Wooldridge Sur. ..... No report.

CALHOUN COUNTY

The Texas Company's No. 1 Smith, J. Timmons Sur., Will Mousin and Driscoll Subd. ..... Drlg. sand and shale 6,454 ft.

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FORT BEND COUNTY

Cullen & West and Gulf Prod. Co.'s No. 1-A Lockwood, Lockwood, John Rabb Sur., 300 ft. out of SW cor. 383-acre tract ..... Sand 3,450-76 ft.; 9⅝-in. csg. 3,450 ft.; set 30 ft. 6⅝-in. screen on bottom with 4¾-in. liner to top; comp. flowing 55 bbls. an hour, ½-in. choke, 145 lbs. pressure on liner; 24.2 gravity (cor.).

GRIMES COUNTY

Rianjo Oil Co.'s No. 2 Cuthrell, Pat B. O'Connor Sur., C of 110-acre tract ..... Rig.

HARDIN COUNTY

Plummer & McDaniel's No. 1 T. S. Reed, 2,500 ft. from W line and 500 ft. from N line of T.&N.O. Sur. No. 396 ..... Shut down in gumbo and lime 1,326 ft.

HARRIS COUNTY

Hattie Baldwin's No. 1 Krahn, 250 ft. out of NW cor. L. Finn Sur. ..... Drlg. sand 492 ft.

Cypress Oil & Dev. Co.'s No. 1 C. Fritz, 500 ft. from N line and 500 ft. from E line of J. Duckworth Sur. ... Drlg. sand and gumbo 1,428 ft.

Humble Oil & Ref. Co.'s No. 5 Minnetex, Mykawa, 150 ft. from S line and 200 ft. from W line, Lot 261, Wm. Lovett Sur. ..... Location.

Humble Oil & Ref. Co.'s No. 6 Minnetex, Mykawa, Wm. Lovett Sur., C of Lot 254 ..... Sand showing oil 5,899 ft.; fishing drill pipe.

JACKSON COUNTY

Chicago-Gulf Co.'s No. 1 Rogers (workover) ..... Drill stem test 3,952 ft. showed dry gas, 1,100 lbs. pressure; cem. 6⅝-in. casing 3,945 ft.

LIBERTY COUNTY

J. R. Ingram's No. 1 C. T. Palmer, James Fenner Sur., 1,000 ft. from W line and 350 ft. from S line of tract.. No report.

Hamm et al's No. 1 Harvard, Davis Hill ..... Gumbo 1,015 ft.; shut down.

Tucker et al's No. 1 Bell, H.&T.C. Sur. No. 4 ..... No report.

MATAGORDA COUNTY

H. C. Cockburn's No. 3 Hawkins, Shepherds Mott, 4,510 ft. SE along SW line of Farnum Fry Sur., thence 242 ft. NE at right angles ..... Heaving shale 5,934 ft.; drill stem stuck.

MONTGOMERY COUNTY

H. W. Lowrie, Jr.'s No. 1 Groggan (G. J. Sunday), Cyrus Wickerson Sur. ..... Drlg. sand 4,200 ft.

Price & Wilhite's No. 2 Juerges ..... Shut down 4,535 ft.

ORANGE COUNTY

Altex Oil Co.'s (Veteran Oil Co.) No. 1 Reed, A. Nelson Sur. No. 1, 500 ft. from N line and 250 ft. from E line of tract ..... Formerly temporarily abnd. 4,603 ft.; sidetracked hole 1,200 ft.; drilled to 1,520 ft.; shut down.

Crew Oil Co.'s No. 1-A Mansfield, 50 ft. E of No. 1 ..... Drlg. water sand 1,375 ft.

POLK COUNTY

Freeman et al's No. 2 Freeman ..... Shut down 3,124 ft.

T. B. Hoffer's No. 1 Saner-Ragly Lbr. Co., 300 ft. out of most northerly cor. of most easterly County School Land Abst. 271 ..... Location.

Sunshine Oil Co.'s No. 1 Olliver, A. Viesca Sur., 600 ft. NE along SE line from S or SW cor. of 50-acre tract and thence 200 ft. NW at right angles ..... Location.

REFUGIO COUNTY

Blanco Creek Oil Co.'s No. 1 Damaan, 150 ft. from N line and 150 ft. from W line of Blk. 16, Bonnie View Ranch Subd. ..... Sand 4,191-4,200 ft.; to test.

Rumble Oil & Ref. Co.'s No. 1 O'Connor, John Keating Sur., 6,012 ft. S from NE cor. along SE line of Lon T. Rios Sur., thence 7,375 ft. W at right angles in John Keating Sur. ..... Location.

SAN JACINTO COUNTY

E. P. Edward et al's No. 1 Bennett, northwest of Cold Springs ..... Spudded and shut down.

TYLER COUNTY

King Oil Co.'s No. 1 Caswell ..... Sand and shale showing oil 1,254 ft.; cmtd. 6-in. csg. 1,218 ft.

Allied Pet. Co.'s (Texas Southern Pet. Co.'s) No. 3 Wilson, Mrs. E. Cherry Sur. No. 798, 1,500 varas from W line and 600 varas from N line ..... No report.

Lew Wentz' No. 1 Mann, James Seals Sur., 320 ft. out of SW cor. 804.25-acre tract ..... No report.

VICTORIA COUNTY

Houston Oil Co.'s No. 1 Conrad, T.&N.O. Sur. No. 1, 1,100 ft. from SW line and 100 ft. from NW line .... Drlg. hard shale 3,369 ft.

Simpson-Fell and Westheimer et al's No. 1 Levi, 2,200 ft. from SW line and 2,000 ft. from NW line of S.A.&M.G. Sur. No. 4 ..... Drlg. shale and lime 4,762 ft.

T. B. Slick Estate's No. 1 McFaddin, J. Vairan Sur., 17,700 ft. NE along SE line from S cor. of survey and thence 5,050 ft. NW at right angles ..... Deepened from 3,513 ft. to 3,528 ft.; set 4 jts. 4-in. and full string 2½-in. tubing; comp. estimated 40,000,000 ft. gas, 1,275 lbs. pressure, ¼-in. chokes; spraying salt water.

The Texas Company's No. 3 McFaddin, S 15° W, 6,200 ft. and N 75° W 1,850 ft. out of NE cor. John M. Rine Sur. ..... Cmtd. 13⅜-in. csg. 1,107 ft.

United Prod. Corp.'s No. 4-A McFaddin, M. Travieso Sur., 1,320 ft. W along N line of C. L. Mann Sur. from NE cor. and 1,980 ft. N at right angles ..... Coring shale 3,715 ft.

WALLER COUNTY

McDaniel and associates' No. 1 Citizens State Bank, B.B.B.&C. Sur., C of 150-acre tract ..... Rig.

WASHINGTON COUNTY

Joe Baker et al's No. 1 Kramer, Brenham, 600 ft. S and 300 ft. W NE cor. 92 acres ..... Drlg. sand 3,005 ft.

Cord Oil Co.'s No. 1-A Hahn, 500 ft. from N line and 1,852 ft. from W line of J. H. Alcorn Sur., Abst. 3... Drlg. sticky shale 2,362 ft.

Fisher and associates' No. 1 H. F. Scholtz, S. F. Austin Sur., 1,100 ft. NW along NE line from SE cor. of 107-acre tract and thence 12 ft. SW at right angles.. Drlg. gumbo 2,350 ft.

Penn-Tex. Oil Co.'s No. 2 Kamas Brenham, S. M. Williams Sur. ..... Drlg. hard sand 3,096 ft.

Yequa Oil Co.'s No. 1 Graves, S. Ciampit Sur., 200 ft. from N line and 900 ft. from W line 111-acre tract.. Drlg. black sandy shale 2,316 ft.

WHARTON COUNTY

H. H. Givens' No. 2 Hudgins, I. B. Phillips Sur. 19 ft. W of No. 2 ..... Shut down in shale 3,205 ft.

SOUTH LOUISIANA

CALCASIEU PARISH

Crawford Doyle's No. 1 Johnson, Sec. 23-9s-13w ..... Shut down 275 ft.

J. O. Davis' No. 1 Industrial, Sec. 29-9s-10w ..... Standing 6,568 ft.

Wilfred Lahay's No. 1 Jardell, Sec. 14-10s-11w ..... Shut down 3,258 ft.

Dr. Thomas et al's No. 1 John Hewitt ..... Location.

Vacuum Oil Co.'s No. 1 Wait (D.D.), 225 ft. out of SE cor. Sec. 13-9s-7w ..... Sand showing oil 6,961-79 ft.; running csg. to test.

CAMERON PARISH

Vacuum Oil Co.'s No. 2 Cameron Meadows, 3,120 ft. S and 1,900 ft. W from NE cor. Sec. 21-14s-9w (500 ft. S No. 1) ..... Drill stem stuck 4,312 ft.; changing rigs.

The Texas Company's No. 7 State, Calcasieu Lake ..... Location.

IBERIA PARISH

Jefferson Lake Oil Co.'s No. 17 Lake Peigneur, Jefferson Island, Sec. 58-12s-5e, 300 ft. SE No. 11 and 285 ft. NE of No. 5 ..... Cap 770-74 ft.; set 10-in. csg. to test for sulphur.

Jefferson Lake Oil Co.'s No. 18 Lake Peigneur, Jefferson Island, Sec. 58-12s-5e, 300 ft. E No. 5 ..... Drlg. 600 ft.

IBERVILLE PARISH

Standard Oil Co.'s No. 1 Gay, Bayou Choctou ..... Set 1 jt. of 3-in. screen 4,353 ft. and full string 2½-in. tubing; comp. flowing at rate of 3,000 bbls. daily on ⅝-in. choke; placed on ½-in. choke; flowing 150 bbls. daily, 29.6 gravity (cor.), Temp. 79°.

Standard Oil Co.'s No. 1 Wilbert-Choctaw, Bayou Choctaw, Sec. 52-9s-11e, 250 ft. W No. 1 Gay ..... Location.

Standard Oil Co.'s No. 7 Wilbert, Bayou Blue .....

Standard Oil Co.'s No. 6 Schwing, Bayou Blue, Sec. 73-9s-11e, 317 ft. S of No. 2 ..... Drlg. shale 3,270 ft.

Standard Oil Co.'s No. 7 Schwing, Bayou Blue, Sec. 74-9s-10w, N 45°, W 1,800 ft. from No. 5 ..... Total depth 1,350 ft.; sand showing oil 1,307-12 ft.; shut down pending completion No. 6.

PLAQUEMINES PARISH

Humble Oil & Ref. Co.'s No. 2 State, Lake Grand Ecaille, Sec. 14-20s-26e ..... Location.

ST. MARTIN PARISH

Federal Pet. Co.'s No. 1 Dangareaux, 11,200 ft. from W line and 50 ft. S of NE cor. of Sec. 140-9s-5e..... Drlg. gumbo 2,512 ft.

TERREBONNE PARISH

The Texas Company's No. 6 State, Caillou Island ..... Total depth 4,486 ft.; sidetracking sandy lime 4,300 ft.

The Texas Company's No. 1 La.L.&E., Bay St. Elaine ... Coring shale 5,596 ft.

The Texas Company's No. 3 La.L.&E., Bay Junop ..... Location.

The Texas Company's No. 4 La.L.&E., Bay Junop ..... Location.

The Texas Company's No. 6 State, Lake Barre ..... Salt 3,848-4,001 ft.; straightening hole.

The Texas Company's No. 10 State, Lake Barre ..... Location.

The Texas Company's No. 11 State, Lake Barre ..... Location.

The Texas Company's No. 12 State, Lake Barre ..... Location.

The Texas Company's No. 13 State, Lake Barre ..... Set 4 jts. 3,854 ft.; comp. flowing by heads 400 bbls. fluid, 50% water.

The Texas Company's No. 14 State, Lake Barre ..... Location.

The Texas Company's No. 5 State, Four Isle, Sec. 23-21s-16e ..... Drlg. lime and gyp 629 ft.

VERMILLION PARISH

Pure Oil Co.'s No. 1 Alliance Land, Sec. 34-11s-1w, 2,600 ft. N and 300 ft. E of SW cor. section ..... Drlg. sand 4,729 ft.

WEST FELICIANA PARISH

Putnam Syndicate's No. 2 Como Plantation, Sec. 51-1s-4w. Shut down for repairs 1,776 ft.

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Continued from Page 30)

J. W. Cooper et al's No. 1 Cooper, NW SW, Sec. 35-11-10 ..... S.D. 3,156 ft.

Cooper et al's No. 2-A Cooper, C SE SE, Sec. 32-11-10... S.D. 1,518 ft.

C. M. Talley et al's No. 1 C. M. Talley, 1,980 ft. W, 660 ft. S, NE cor. SE, Sec. 29-11-10..... Tested dry; S.D. 1,380 ft.

RED RIVER PARISH

La. Oil Dev. Co.'s No. 2 La. Delta Pecan Co., 2,950 ft. S, 300 ft. E, NW cor., Sec. 27-12-11 ..... Spudded in; S.D. 50 ft.

Mack Jourden Co.'s No. 1 Lockett, 4,035 ft. S, 1,080 ft. E, NW cor. SW, Sec. 29, in Sec. 32-13-10 ..... S.D. for drill stem 1,850 ft.

RICHLAND PARISH

Alto Gas Co.'s No. 2 Hunt, 660 ft. S and E, NW cor., Sec. 13-17-5 ..... Derrick.

Southern Carbon Co.'s No. 3 Rosengraut & Ducomb, 660 ft. S and E, NW cor., Sec. 30-17-6..... Completed June 23; 18,129,600 ft. gas 2,459 ft.

Southern Carbon Co.'s No. 1-B C. M. Noble, 2,966 ft. N, 1,525 ft. W, cor. Secs. 7, 8, 17 and 18, in Sec. 37-15-6.. Location.

SABINE PARISH

Diffie & Barnett's No. 1 Lites (was J. W. Clark's), 330 ft. N, 330 ft. W, SE cor. SW NW, Sec. 24-8-11..... S.D. 105 ft.

R. L. Gay, tr.'s No. 1-A Long Bell Lbr. Co., 430 ft. S, 200 ft. W, NE cor. NW NW, Sec. 10-8-13 ..... S.D. 3,475 ft.

Langbridge Oil Co.'s No. 1 Stephens, 330 ft. N and E, SW cor. SE NE, Sec. 17-9-11..... Rigging up.

J. J. Keen, tr.'s No. 1 Belton (no check), Sec. 31-9-13... Set 8-in. 1,590 ft.

H. W. Perritt's No. 4 Bowman-Hicks, SE cor. SE NE, Sec. 2-7-12 ..... Arranging to test 2,320 ft.

A. H. Thames' No. 1 Edward est., 150 ft. NW SE cor. NE SE, Sec. 8-8-13 ..... S.D. for water 1,200 ft.

TENSAS PARISH

Nick Barbaro's No. 1 Mutual Realty Co., 660 ft. S and W, NE cor., Sec. 36-11-9e ..... S.D. 876 ft.

A. R. Willis et al's No. 1 Currey, 1,320 ft. S, 1,320 ft. E, NW cor., Sec. 29-11-13 ..... S.D. 3,545 ft.

UNION PARISH

Bahan & Bahan's No. 1 U. J. Jarmon, 720 ft. E, 3,329 ft. S, NW cor. NE, Sec. 27-23-3 ..... Set 8-in. 660 ft; 6-in. 2,080 ft.

Dan Brooks' No. 1 Odus Douglas, 330 ft. S and E, NW cor. NE SW, Sec. 9-22-3 ..... Derrick.

T. P. Fields, tr.'s No. 1 Summitt Land Co., C W½ NW, Sec. 1-21-1w ..... Rigging up.

WEBSTER PARISH

Coyle, tr.'s No. 1 Fraser, 200 ft. N, 200 ft. E, SW cor. NE SE, Sec. 27-23-11 ..... Derrick.

WEST CARROLL PARISH

United Gas Public Service Co.'s No. 1 Pioneer Cooperage, 663 ft. E, 2,954 ft. S, NW cor., Sec. 29-21-9.... Drlg. 3,020 ft.

WINN PARISH

Gulf Ref. Co.'s No. 1-A Bodcaw Lbr. Co., 911 ft. N, 970 ft. E, SW cor., Sec. 4-10-5w ..... Drlg. 1,060 ft.

ARKANSAS

CHICOT COUNTY

R. R. Smith's No. 1 Lytle, 660 ft. N, 660 ft. E, C, Sec. 21-23-3 ..... T.A. 2,925 ft.

COLUMBIA COUNTY

Kendall Oil Co.'s No. 1 Fullenwelder, Rhea & Kitchen, Sec. 13-17-22 ..... S.D. 778 ft.

CLAY COUNTY

S. C. Jeffus' No. 1 Underwood, 510 ft. N, 350 ft. W, C NW SE, Sec. 4-20-3 ..... Repairing derrick 1,252 ft.

CLEVELAND COUNTY

Crum & Stillwell's No. 1 E. R. Bell, Sec. 10-10s-12w.... Rigging up.

CLEBURNE COUNTY

(Cable tools)

Donnelly-Craver et al's No. 1 Donophan Lbr. Co., SE cor. NW, Sec. 33-11-9 ..... S.D. 3,740 ft.

DALLAS COUNTY

E. C. Brewer's No. 1 W. E. Hillman, 330 ft. E, 40 ft. S, NW cor. SE NE, Sec. 20-10-13 ..... S.D; W.O. 2,869 ft.

J. H. James, tr.'s No. 1 Fordyce Lbr. Co., 200 ft. S, 200 ft. E, NW cor. NW NE, Sec. 11-9-15..... S.D. funds 2,520 ft.

GRANT COUNTY

Spann & McClung's No. 1 Sarah Page, 660 ft. W, 660 ft. S, NE cor. NW, Sec. 3-3-12 ..... Dry and abd. 1,074 ft.

HOT SRINGS COUNTY

Star Oil Co.'s No. 1 Cunningham, 285 ft. S, 285 ft. W, NE cor., Sec. 11-3-16..... Sidetracked 2 joints D.S.; drlg. 1,260 ft.

LAFAYETTE COUNTY

Smitherman & McDonald's No. 1 Rogers, 330 ft. N and E, SW cor. NW SE, Sec. 17-15-22 ..... S.D. 2,035 ft.

LINCOLN COUNTY

Lawrence Cook, tr.'s No. 1 McGhee Planting Co., 420 ft. S, 320 ft. W, NE cor. NE SW, Sec. 5-8-7..... Re-cmtd. 10-in.; T.D. 2,000 ft.

LITTLE RIVER COUNTY

Roberts Oil Co.'s No. 1 H. J. Russell, 330 ft. E, 330 ft. S, NW cor., Sec. 26-12-29 ..... Location.

LOGAN COUNTY

J. H. Flowers' No. 1 J. H. White, Sec. 13-6-26 ..... S.D; W.O. 3,570 ft.

MILLER COUNTY

East Texas O. & G. Co.'s No. 1 Harvey, 500 ft. E, 300 ft. S, NW cor., Sec. 2-15-26 ..... T.A. 910 ft.

E. & F. Oil Co.'s No. 1 E. L. Beck, 200 ft. S, 200 ft. E, NW cor. SW, Sec. 36-15-26 ..... T.A. 2,968 ft.

Fitzwater et al's No. 1 Beck, 200 ft. N, 300 ft. W, SE cor. SW SE, Sec. 33-15-26 ..... T.A. 93 ft.

J. D. McRae's No. 1 Smith, 150 ft. N, 150 ft. W, SE cor., Sec. 28-15-26 ..... Derrick.

W. E. Noel et al's No. 1 Dickson hrs., 1,980 ft. W, 660 ft. S, NE cor., Sec. 11-20-27 ..... Location.

OUACHITA COUNTY

Copenhaven et al's No. 1 Elliott, Sec. 11-15-17 ..... Bailed dry 2,310 ft; S.D; W.O.

Boling & McLeon's No. 1 L. D. Nealy, 150 ft. S, 150 ft. W, NE cor. SE SW, Sec. 25-16-15 ..... Drlg. shale 1,702 ft.

PIKE COUNTY

E. R. Henderson's No. 1 Tilyou, 660 ft. W, 500 ft. S, NE cor. NE SE, Sec. 26-8-14 ..... T.A. 2,909 ft.

E. R. Henderson's No. 1 J. L. Lee, 400 ft. S, 350 ft. E, NW cor. SW SE, Sec. 31-8-24 ..... Coring 912 ft.

SCOTT COUNTY

Heavener O. & G. Co.'s No. 1 Riser, Sec. 36-4-26 ..... S.D; T.D. 1,436 ft.

Waldron O. & G. Co.'s No. 1 White, NE cor. SW NW, Sec. 17-3n-29 ..... S.D; waiting on csg. 1,860 ft.

UNION COUNTY

Chapman & Wilson's No. 1 A. H. Hadley, 330 ft. N, 330 ft. E, SW cor. NE SW, Sec. 3-18-13 ..... 600 ft. fluid 30% S.W. in hole; T.A. 3,570 ft.

VAN BUREN COUNTY

Glenn Kohle et al's No. 1 Scalan, 200 ft. S, 200 ft. W, NE cor. SE NW, Sec. 5-19-13 ..... T.A. 50 ft.

WASHINGTON COUNTY
(Cable tools)

C. H. Willoughby's No. 1 Jones, Sec. 34-16-30 ..... S.D. for funds 1,795 ft.

H. H. Taylor et al's No. 1 Runny, C NE SW, Sec. 1-13-29. Dry and abd. 1,702 ft.

YELL COUNTY
(Cable tools)

Tegmeier & Luckett's No. 1 Falcon, Sec. 36-7-21 ..... S.D. 5,710 ft.

EAST TEXAS

BOWIE COUNTY

Devore & Midfield's No. 1 Roy B. Cooper, 200 ft. S, 200 ft. W of NE cor. R. B. Cooper 115-acre tract, Wm. Ward Sur. ..... Arranging core 2,385 ft.

Hindeman & Ball's No. 1 Merritt (was Maud-Redwater Oil Co.'s), 175 ft. N, 175 ft. E, SE cor. G. W. Hardidge 100-acre tract on Floyd Merritt tract in Y. S. McKinney Sur. ..... S.D. 2,520 ft.

Tarkington & Jones' No. 1 W. W. Whybark, 200 ft. S, 300 ft. W of SW cor. J. H. Dyer Sur. ..... Derrick.

Lee Timberlake et al's No. 2 Tidwell, 2,510 ft. N, 655 ft. W, SE cor. T. M. Rice Sur. ..... Arranging to resume drlg. 3,000 ft.

CAMP COUNTY

McDonald Bros.' No. 1 Tillery, 150 ft. E, 450 ft. S, NW cor. 127-ac. tr. in J. H. Murphy Sur. ..... S.D. 3,600 ft.

CASS COUNTY

E. K. Atkinson's No. 1 T. J. Wilson, 1,038 ft. S of N line, 2,376 ft. E of W line of H.R.S., J. R. McFarland Sur. ..... Began June 20; set 10-in. 158 ft; drlg. 350 ft.

R. G. Baker's No. 1 W. R. Caver, on W. R. Caver 75-ac. tr., John Lick Sur. ..... S.D. 2,630 ft.

Davis & Pigg's No. 1 Roy Brian, SW cor. Roy Bryan 38-ac. tr., Albert H. Latimer Sur. ..... Drlg. 2,050 ft.

Everts Drlg. Co.'s No. 1 H. W. Whittington, 200 ft. S and W, NE cor. 69-ac. Whittington tr., L. Strong Sur. ..... Changing to heavy rig 300 ft.

Geo. McKamie's No. 1 R. E. Hall, 150 ft. N, 150 ft. W, SE cor. Hall's 117-ac. tr., H. Buckler Sur. ..... Coring shale 3,793 ft.

C. E. Murdock's No. 1 First National Bank, Evans Watson Sur. ..... Arranging to resume drlg. 3,990 ft.

John Nelson's No. 1 T. A. Irvin, McNary Harris Sur., 200 ft. S and E of NW cor. ..... Began Oct. 11; set 10-in. 120 ft; drlg. 1,462 ft.

Olds & Smith's No. 1 Atheny, 3,056 ft. W-E line, 856 ft. S-N line, J. C. Byers Sur. ..... Coring sandy shale 2,908 ft.

John C. Rogers' No. 1 I. E. Lanier, 573 ft. N, 879 ft. W, SE cor. Lanier 86 ac. in K. E. Welborn Sur. ..... S.D. 2,275 ft.

John C. Rogers et al's No. 1 W. Q. Henderson, 3,100 ft. S, 3,100 ft. E, NW cor., Wm. Davis Sur. ..... S.D. 955 ft.

HARRISON COUNTY

Ben Banner's No. 1 J. C. Lowery, in center of J. C. Lowery 8-ac. tr., W. D. Stanfield Sur. ..... S.D. 3,300 ft.

Everett Prod. Co.'s No. 1 R. L. Gypert, 1,320 ft. W of NE cor., 150 ft. at right angles from NE cor. of E. M. Wilder Sur. in Richard Hooper Sur. ..... Dry and abd. 4,007 ft.

Gholson et al's No. 1 Bivins Farm Co., on J. K. Bivins, Jr.'s 320-ac. tr., Thos. Toby Sur. ..... S.D. 2,362 ft.

O. O. Olford et al's No. 1 R. W. Bolding, 330 ft. E of SE cor. J. B. Cullen's 161-ac. tr., 300 ft. N of N line of Mrs. C. L. Brown's 20-ac. tr., W. W. O. Stanfield Sur. ..... S.D. 2,050 ft.

O. H. Parkening's No. 1 T. J. Taylor, C, Blk. 32, W. H. Payne Sur. ..... S.D. 2,530 ft.

Ryan Consolidated Pet. Corp.'s No. 1 Dr. H. H. Key, 1,500 varas N of SE line, 500 varas E of SW line, of E. Carroll Sur. ..... Drlg. lime 3,112 ft.

Thomas & Kinsey's No. 1 J. R. Watson, Thos. Iden Sur. .. Derrick.

MARION COUNTY

Gist, Claunch & Dodson's No. 1 Miller, 1,470 ft. E line, 725 ft. N line, SW cor. H. Fulgran H.R. Sur. ..... S.D. 300 ft.

Geo. Hindeman et al's No. 1 F. V. Lindsey, 2,500 ft. S, most northerly N line, 3,555 ft. E most easterly W line, Alexander Albright Sur. ..... S.D. 2,380 ft.

Hindeman & Rhondo's No. 1 McGaughey, 1,547 ft. W most northerly SW cor., 1,638 ft. N most northerly S line, W. J. Willis Sur. ..... S.D. 3,910 ft.

Shelton et al's No. 1 J. M. McNeal, 800 ft. S, 400 ft. W, NE cor. McNeal's 721-ac. tr., R. Fowler Sur. .... S.D. for fuel 3,750 ft.

PANOLA COUNTY

Hoffer et al's No. 1 Cameron Lbr. Co., center 1,306-ac. tr. in W. M. A. LaGrove Sur. ..... Derrick.

Moses & Wallace's No. 1 Daniel, 600 ft. N and W lines, Mrs. Gerrell 100-ac. tr., SW cor. Isabel Hanks Sur. .. Derrick.

G. A. Davidson's No. 1 Latham, Wm. Rich Sur. ..... S.D; changing to heavy rig 550 ft.

J. L. Nelson et al's No. 1 J. W. Williams, 300 ft. S, 700 ft. W, NE cor. Williams' 67-ac. tr. in Jas. Hanks Sur. ..... Rigging up.

RED RIVER COUNTY

D. M. Buffington's No. 1 Hossler, E. Hughhart Sur. .... S.D. 2,795 ft.

Johnson Pet. Co.'s No. 2 Randolph, Edw. Dean Sur. .... S.D. 2,280 ft.

SHELBY COUNTY

I. M. Bradley's No. 1 Ashberry (no check), G. W. Mitchell Sur. ..... Drlg. broken chalk showing oil 3,060 ft.

S. L. Chapman's No. 1 Pickering Lbr. Co., C. E. Henry (headright) ..... Drlg. 3,850 ft.

Chapperell Oil Co.'s No. 2 Holt, Matthew Moore Sur. .... Coring 3,110 ft.

K. H. Francis' No. 1 John Mims, Mary Smith Sur. .... Derrick pattern.

H. P. Glidden's No. 1 Pickering Lbr. Co., Jonas Harrison Sur., 300 ft. E of NW cor., 150 ft. S of N line at right angles Pickering 59-acre tract. ..... Began June 19; set 10-in. 105 ft; drlg. 600 ft.

H. H. Gracey's No. 1 J. A. Morrison, 1,500 ft. N, 200 ft. E, SW cor. J. A. Morris' 109-ac. tr., Wm. English Sur. ..... Fishing for D.S. 2,525 ft.

Wm. A. Stephens' No. 1 Foster & Billingsly, 150 ft. W of CEL Foster & Billingsly's 109-ac. tr., J. Bowlin Sur. .. S.D. 1,540 ft.

T. A. Martin's No. 1 J. B. Bush, S 8° E, 2,000 ft. from NW cor. J. B. Bush's 77-ac. tr., thence E at right angles to said line 200 ft., Alfred Lindsey Sur. ..... Derrick.

Henry Maulding's No. 1 Frost Lbr. Co., NE cor. Frost Lbr. Co.'s 80-ac. tr., A. D. Fountain Sur. ..... Changing rig 1,880 ft.

George N. Pace's No. 1 E. H. Powers, western J. Timms Sur., 150 ft. E of W line, 200 ft. N of S line Powers 126-acre tract ..... Derrick.

Ridgeway et al's No. 1 Polley, Domingo Gonzales Sur., 3,180 ft. E of SW cor., 160 ft. N at right angles of Polley 457-acre tract ..... Derrick.

Schultz et al's No. 1 Hughes, 150 ft. SW cor. Hughes' 116-ac. tr., J. Clay Sur. ..... S.D. 2,640 ft.

Sloan Prospecting Co.'s No. 1 Sanford, approximately 300 ft. N and 200 ft. E, SW cor. B. Sanford 49-ac. tr. in M. M. Vann Sur. ..... Coring 3,057-63 ft.

Sloan Prospecting Co.'s No. 1 Windham, H. English hrs. ..... Swbng. small amount oil through 2-in. tubing; T.D. 3,399 ft.

C. H. Tautenhahn's No. 1 J. C. Bogard, 300 ft. S, 900 ft. E, NW cor. J. C. Bogard's 52-ac. tr., Thomas Baker Sur. ..... S.D. 20 ft; waiting on D.S.

Tenant et al's No. 1 J. Henry, C. Z. Walker Sur. ..... Rigging up.

LOUISIANA-ARKANSAS PROVEN AREAS

(Continued from Page 30)

Zeke Lohman's No. 1 McCormick, 660 ft. E, 330 ft. N, SW cor. NE SW, Sec. 2-7-11 ..... S.D. 95 ft.

Loring Oil Co.'s No. 16 Bowman-Hicks, 640 ft. W, 200 ft. S, C, Sec. 3-7-13 ..... Rigging up.

Loring Oil Co.'s No. 17 Bowman-Hicks, 1,600 ft. S, 275 ft. W, NE cor., Sec. 16-7-13 ..... Derrick.

Lyons & Neely's No. 1 Duggan, NW SE, Sec. 14-7-11 ... Location.

Magnolia Pet. Co.'s No. 1 Peterson, 200 ft. S and E, NW cor. NE NE, Sec. 10-7-11 ..... Location.

L. K. McGuffin's No. 1 Bush, NW cor. NW SE, Sec. 1-7-11 ..... S.D. 400 ft.

Ben Merritt, tr.'s No. 3 Byrd, Sec. 1-7-11 ..... S.D. 88 ft.

Sabine Royalties Co., Inc.'s No. 1 Hill, 400 ft. S, 200 ft. E, NW cor. NE NE, Sec. 5-7-11 ..... Deepened to 2,546 ft; W.O.S.R.

Sabine Royalties Co.'s No. 2 Hill, Sec. 32-8-11 ..... Set 6-in. 2,302 ft.

A. F. Tarver's No. 1 Cutrer, 330 ft. S and E, NW cor., Sec. 12-7-11 ..... Dry and abd. 2,550 ft. (cor. depth).

The Texas Co.'s No. 1 A. L. Landrum, 330 ft. S and W, NE cor. SE, Sec. 32-8-11 ..... Began June 23; set 10-in. 89 ft.

Houston-Sabine Prod. Co.'s No. 1 Sabine Lbr. Co. (was Triangle Pet. Co.'s No. 2 Sabine Lbr. Co.), 330 ft. N and E, SW cor., Sec. 36-8-12 ..... Set 6-in. 2,238 ft.

WEBSTER PARISH

Cassidy & Davis' No. 1 Nickerson, 300 ft. S, 300 ft. W, NE cor. SW, Sec. 29-23-10 ..... S.D. 150 ft.

ARKANSAS

UNION COUNTY—EL DORADO

Lion O. & R. Co.'s No. 9-A G. P. Hayes, 242 ft. S, 246 ft. W, NE cor. Lot 5, NE, Sec. 4-16-15 ..... Cored oil and S.W. sand 4,017-25 ft; arranging to deepen.

Southern Prod. Co.'s No. 1 Wingfield, NE cor. SE NW, Sec. 16-19-15 ..... S.D. 2,608 ft.

UNION COUNTY—URBANA

Marine Oil Co.'s No. 1 Winn est., 330 ft. S and E, NE cor. 8½ NW, Sec. 11-18-13 ..... T.A. 3,586 ft.

Marine Oil Co.'s No. 2-E Thompson, 330 ft. N, 330 ft. E, SW cor. NE NE, Sec. 10-18-13 ..... Location.

Wilson & Chapman's No. 1 Adkins, 330 ft. N and W, SE cor. SW NE, Sec. 3-18-13 ..... Drlg. red beds 3,356 ft.

EAST TEXAS

PANOLA COUNTY

Ark.-La. P. L. Co.'s No. 14 Werner, 341 ft. S, 300 ft. W, NE cor. Werner 74-ac. tr., Ben C. Jordon Sur. ..... Drlg. hard lime 3,857 ft.

Daisy O. & G. Co.'s No. 1 Rucks, John Palmer Sur. ..... Drlg. 2,740 ft.

Dillon & Braham's (was W. G. Banks et al's) No. 1 C. C. Baldwin, 1,395 ft. W, 1,363 ft. S, NE cor. Baldwin 290 ac. in Hampton West Sur. ..... S.D. 1,555 ft.

United Prod. Corp.'s No. 17 Steele, 1,320 ft. N, 660 ft. W, SE cor. C. D. Steele lse., in B. C. Jordan Sur. .... Location.

United Prod. Corp.'s No. 10 Warner, 388 ft. N, 2,467 ft. W, SW cor. Thos. Cox Sur. in Ben Jordon Sur. .... Arranging to set 6⅝-in. 4,622 ft.

Southwestern O. & G. Co.'s No. 1 E. R. Vinson, 3,005 ft. S, 1,001 ft. W, NE cor. C. T. Anderson Sur. ..... S.D. 2,550 ft.

MISSISSIPPI

HINDS COUNTY

Hopkins Gas Co.'s No. 1 Ridgeway, 680 ft. N, 70 ft. W, SE cor. NW, C, Sec. 2-5-1e ..... Rigging up.

WILDCAT OPERATIONS IN MISSISSIPPI

CLAY COUNTY
(Cable tools)

Company, farm and location—	Remarks:
Ohio Oil Co.'s No. 1 Cantrell, NE cor., Sec. 16-15-5	Drlg. shale 4,290 ft.

HINDS COUNTY

Attkisson & Dyer's No. 1 Downing et al, SE NE, Sec. 27-6-1 ..... Arranging core 2,540 ft.

Howard Oil Co.'s No. 1 Jackson College, C NW NW, Sec. 9-5-1e ..... S.D. 74 ft.

Southern Pet. Co.'s No. 1 Wilson (was Tri-State O. & G. Co.'s), 320 ft. E, 240 ft. N, SW cor. SE NE, Sec. 28-6-1e ..... S.D. 20 ft; W.O.

JASPER COUNTY

Bay Springs Pet. Co.'s No. 1 Keyes, C NW NE, Sec. 2-12-9 ..... S.D. for wtr. 2,032 ft.

MONROE COUNTY

Amory Dev. Co.'s No. 1 Bourland, Sec. 2-13-19 ..... S.D. 3,015 ft.

McAlpine et al's No. 1 Cowart, second hole, Sec. 2-13-19. Drlg. hard lime 2,792 ft.

NOXUBEE COUNTY

Thompson & Donohue's No. 1 Donohue, Sec. 25-16n-17e. Moving in rig.

RANKIN COUNTY

Attkisson & Dyer's No. 1 Valentour, 200 ft. S, 200 ft. E, NW cor., Sec. 18-5n-2e ..... Rigging up.

Harding & Flint's No. 1 Webb, center Lot 32, Blk. B, East Jackson Place, Jackson City Subd., Sec. 12-5-1. S.D. funds 880 ft.

R. A. Moore et al's No. 1 Interior Lbr. Co., Sec. 28-6-1e.. S.D. 900 ft.

Cleve Love's No. 1 Muse, SE cor. SW SW, Sec. 32-7-4e.. S.D. 4,000 ft.

Square Deal O. & G. Co.'s No. 1 Spann, NW cor. SE NE, Sec. 13-5n-1e ..... Derrick.

Union Drlg. Co.'s No. 1 Pate Royalty Co., NW cor. Lot 11, Blk. F, E. Jackson Pl., First Addn., Sec. 12-5n-1e.. Rigging up.

United Gas Public Service Co.'s No. 1-A Hartfield, Sec. 7-5n-3e ..... Set 9-in. 852 ft.

SCOTT COUNTY

M. U. Culley et al's No. 1 Owens, Sec. 2-8-9 ..... Derrick.

WARREN COUNTY

Eagle Bend O. & G. Co.'s No. 1 Kiger, SW cor. SW SE, Sec. 9-18-2 ..... S.D. 2,130 ft.

WINSTON COUNTY

Miss. Drlg. Co.'s No. 1 Scarbrough, NW cor., Sec. 15-13-14 ..... Cored sandy shale 3,312-14 ft.

YALOBUSHA COUNTY

Collett-Carter Oil Co.'s No. 2 Blackmur, 990 ft. W, 285 ft. N, C, Sec. 11-11-4 ..... Drlg. hard blue shale 3,450 ft.

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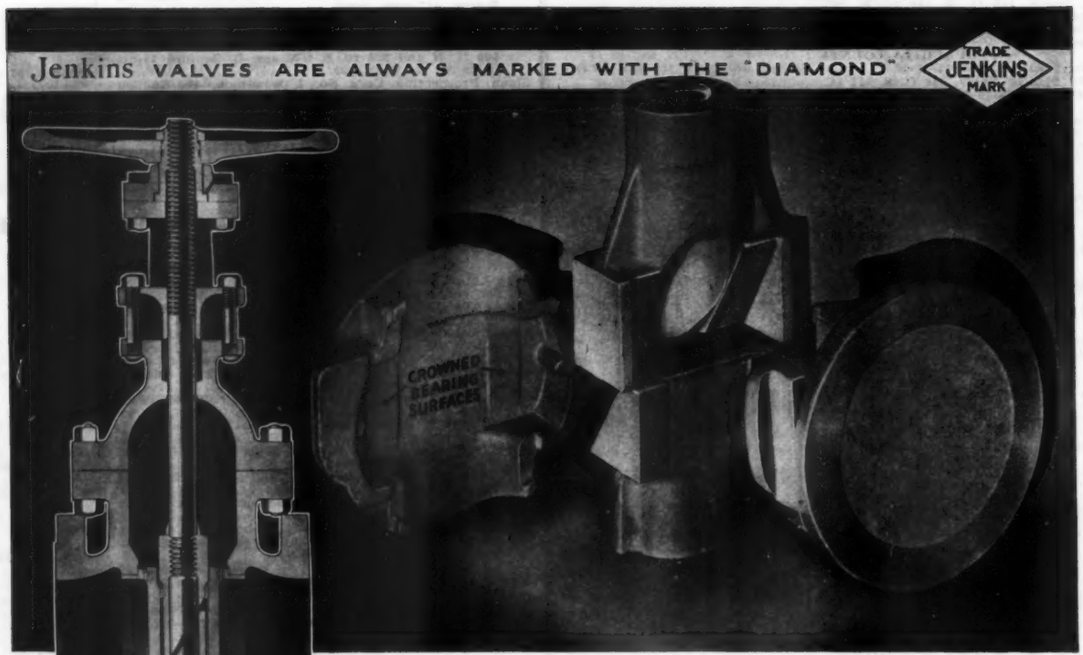

At left: Sectional view, Fig. 879, Jenkins Extra Heavy Iron Body Double Disc Parallel Seat Gate Valve, Flanged. Outside screw and yoke, rising spindle. Above: View showing the upper and lower spreaders and the two discs comprising the closing mechanism. Note the two crowned bearing surfaces which are located on the back of each disc.

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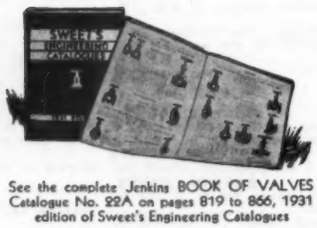
THIS new Jenkins Iron Body Double Disc Parallel Seat Gate Valve will not jam. Neither will it stick. The reason lies in the unique disc and spreader construction.

The two parallel discs make a clean contact with the seat rings in the body. This contact is uniform all around, because the pressure exerted by the spreaders is uniformly distributed over the discs due to the two crowned bearing surfaces on each disc, their correct size and accurate location. There is no sliding, rubbing or scraping between seat rings and discs, either when the valve is being opened or being closed. Contact is perfect.

The two inter-acting wedge-shaped spreaders do not exert pressure against the discs during closing until after these discs are in the final closing position. Dragging on the seats is prevented because the discs do not START to leave seat rings, during opening, until after all spreader pressure is relieved.

This means no jamming, no sticking. It makes possible smooth valve operation and definitely contributes to good performance. Form 143, giving details, sent on request.



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VALVES
Since 1864

WILDCAT OPERATIONS IN KANSAS

(Continued from Page 35)

NORTON COUNTY

Richards et al's No. 1 Colby, Sec. 17-4-21w.....Rig.

OSAGE COUNTY

Briggs & Smith's No. 1 Wood, SE NW Sec. 21-14-15 ....Shut down 1,050 ft.
Fields' No. 1 Usker, SE cor., Sec. 35-16-17.....Shut down 400 ft.

RAWLINS COUNTY

J. G. Durham et al's No. 1 Weaver, SE cor., Sec. 3-2-35w..Drlg. 3,468 ft.

RICE COUNTY

Solar Oil Co.'s No. 1 Zink, SE NW, Sec. 3-19-10w.....Drlg. 1,820 ft.
Detrick & Langston's No. 1 Purcell, NW cor. Sec. 33-19-9w .....Drlg. 2,080 ft.
McFadden and Shell's No. 1 Jennings, SW NE NW, Sec. 29-15-6w .....T. D. 1,450 ft.; plugging back to 1,128-48 ft.; shot 20 qts.; 100,000 ft. gas; completed.
Cress et al's No. 1 Sharp, SE NE, Sec. 13-20-10w.....Show oil 3,107-15 ft.; Silicious 3,330-36 ft.; estimated 1,500 bbls.; shut in.
Allison-Fitzwilliams' No. 1 Blake, NE NW, Sec. 9-18-10w. Drlg. 1,100 ft.

RUSH COUNTY

Dewey & Mitchell's No. 1 Greenawalt, C SW, Sec. 17-19-16w .....Drlg. 3,505 ft.

RUSSELL COUNTY

Agate Oil & Gas Co.'s No. 1 Rochfellow, SE cor., Sec. 6-13-12w .....Shut down 3,374 ft.
Gilbreath et al's No. 1 Bratton, C NE, Sec. 33-11-13w....Show oil 3,090-94 ft.; drlg. 3,450 ft.

SEDGWICK COUNTY

Buck et al's No. 1 McNananan, NE NW NW, Sec. 2-29-1. Cleaning out 2,440 ft.

SALINE COUNTY

Twin Mounds Oil Co.'s No. 1 Weis, C W half NE NW, Sec. 20-13-4w .....Shut down 2,700 ft.

SHERIDAN COUNTY

Flo et al's No. 1 Shoemaker, SE SW SW, Sec. 27-7-26w..Shut down 2,445 ft.

STAFFORD COUNTY

Rosenthal, Stanolind and Amerada's No. 1 Gray, C NE, Sec. 11-24-13w .....Drlg. 2,820 ft.

STEVENS COUNTY

Argus Prod.'s No. 2 Christopher, C NE, Sec. 10-33-39w...Drlg. 5,430 ft.

SUMNER COUNTY

Spencer et al's No. 1 Porter, NE SW, Sec. 13-33-4w.....Drlg. 1,050 ft.
Otstot et al's No. 2 Marlow, C SE NW 8E, Sec. 22-33-3w..Drlg. 3,425 ft.

WASHINGTON COUNTY

Sincox et al's No. 1 Penwell, NW SE NE, Sec. 16-3-3.....Shut down 1,720 ft.

CANADIAN FIELDS

(Continued from Page 42)

34-1-20w4, is drilling steadily. The location is 25 miles west of Milk River and 6 miles north of the international boundary on acreage of the Nordon Corp. The area was geologized some time ago by Nordon Corp., which holds 13,000 acres, about 10 per cent of its Alberta holdings, on this structure. A series of structure tests were put down before the commercial test was located. It is estimated that the Twin River test will go 4,000 feet to reach its potential producing horizon. Parco Oil Co. is the Canadian subsidiary of the Producers & Refiners Corp. and this is the first drilling it has undertaken in the Alberta fields.

Red Coulee Field

On the Canadian end of the international Red Coulee Field, Southern Alberta Exploration Co.'s No. 2, Section 3-1-16w4, 440 feet east of No. 1 producer, is pulling pipe after drilling to 2,600 feet. A little gas, about 1,000,000 feet a day, with some oil, was met in the Vanalta sand between 2,370 and 2,401 feet, but failed to develop satisfactory commercial production. To the north, Devonshire Oils' No. 1, which is being abandoned by Alberta Pacific Consolidated Oils, Ltd., is reported to have encountered water around 1,950 to 2,000 feet.

Tests in the Foothills

On the Aldersyde structure, south of Calgary, Ranchmen's Gas & Oil Co.'s No. 1, LSD 16, Section 13-20-29w4, is drilling below 4,875 feet, with continued small shows of oil and gas.

On the Moose Mountain structure, Graystone Consolidated Petroleums' No. 2 Signal Hill, LSD 9, Section 34-23-5w5, has been cleaned out and tested following a shot at 4,123 feet. The bailer brought up a little high-grade crude, but no commercial production, and the test is now deepening below 4,165 feet.

Northern Alberta Wildcat

Crudome Oils, Ltd., of Toronto is reported moving in standard equipment for its wildcat test at Mirror landing, on the Athabaska River. Location is in Township 72-25w4 and equipment is being moved from the Wainwright Field via Fort Smith. The company holds 32,000 acres in the vicinity of Mirror Landing, and J. H. McCorkingdale is field superintendent.

Wainwright Field

Charles Atkins and T. J. Sugars are reported preparing to start work on Atkins Syndicate's No. 1 test in LSD 9, Section 18-45-6w4, in the Wainwright Field. They also have contracts for cleaning out and reconditioning some of the old Wainwright producers.

Ribstone Field

In the Ribstone Field, eastern Alberta, Rayco Oils' No. 1, LSD 3, Section 4-47-1w4, is drilling below 2,513 feet and approaching the limestone. Drilling operations in this field have been hampered by water shortage, and water lines are being extended to river sources. Ribstone Oils, Ltd., is making regular deliveries of crude from the producing wells to the Canadian Pacific Railway for fuel oil purposes.

Manitoba Drilling

In the Manitou district, southwestern Manitoba, Commonwealth Petroleums' No. 2, LSD 2, Section 26-2-9WPM, is reported drilling in the Dakota sands below 700 feet. A show of gas was reported at 600 feet. Commonwealth's No. 1 got a small commercial gas production in the Dakotas, and No. 2 is nearing the same gas sand.

British Columbia Tests

In British Columbia, Altamont Oil Co.'s No. 1 on Lulu Island, south of Steveston, is reported working on derrick and bringing in a heavy-duty rotary outfit.

In the Cariboo district, Cariboo Oil Co.'s No. 1 near Australian is reported shooting an oil sand at 912 feet, after encountering shows of 31.5 gravity crude from 800 feet.

Alberta Oil Regulations

For the purpose of drafting regulations under the Oil and Gas Wells Act of Alberta, and considering the general question of the operation and conservation of Alberta's petroleum and natural gas resources, a commission advisory to the minister of mines has been appointed. Members of the commission are: A. A. Carpenter, chairman of the Alberta Public Utilities Commission; Stanley J. Davies, petroleum engineer for independent companies; R. Van A. Mills, Hudson's Bay Oil & Gas Co.: Eric L. Harvie of Calgary, representing independent operators; Roy Armstrong, Royalite Oil Co.; B. L. Thorne of the C.P.R. natural resources department; William Calder, director of petroleum resources for the Alberta government. H. G. Reid, minister of mines, met with the commission at its opening session recently.

Representations have been made to the government in regard to some modification of the plan of restricting Turner Valley gas production to 40 per cent of the open flow, and in regard to the proposed

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cancellation of leases for nonpayment of rentals.

Shareholders of Oil Selections, Ltd., held a meeting at Toronto when the following directors were elected: A. B. Stodart, W. R. P. Parker, F. Y. McEachren, J. L. Graham and H. M. Weir. Mr. Graham is field manager. The company was organized originally to develop acreage in the Wainwright Field but later transferred its activities to Rusk County, East Texas.

Ontario Drilling

In the Dawn Field, Lambton County, Ontario, Union Natural Gas Co.'s No. 60, NE, Lot 25, Concession 1, Dawn Township, is drilling around 600 feet.

In the D'Clute Field, Kent County, Union Natural Gas Co. is starting its first test of the 1931 program, No. 19, in NW, Lot 16, Concession 15, Raleigh Township. The test is rigging up. Considerable new gas production was secured in the D'Clute Field last season, with a number of dry holes; but the only test drilled this year has been American Engineering Co.'s No. 4 on the lake front, which finished dry.

Farther west, in the old Tilbury oil area, the test drilled by Joe Hussey and associates near Fletcher is reported dry at 1,400 feet. It will likely be carried a little deeper. Small shows of oil and gas were met around 1,390 feet.

In Harwich Township, F. M. Stover & Sons' No. 1 wildcat test west of McKay's Corners is reported drilling around 700 feet. This is some distance west and north of the Union Natural Gas Co.'s dry wildcat drilled on the Harwich-Howard town line.

In Mosa Township, Middlesex County, Southern Ontario Gas Co.'s No. 9 is reported rigging up in SW, Lot 13, Concession 3, to test the gas sand found productive on Nos. 1 and 7.

In the Norfolk-Haldimand area, Union Natural Gas Co.'s No. 203, SE, Lot 9, Concession 5, Rainham Township, Haldimand County, finished a small gasser, good for around 38,000 feet. In Walpole Township, Haldimand County, Union's No. 204, SW, Lot 23, Concession 7, is resuming after running casing. Union's No. 205, NE, Lot 13, Concession 4, Walpole, finished a dry hole. In Norfolk County, Union's No. 206, north one-third, Lot 19, Concession 5, Woodhouse, is drilling.

In the Tillsonburg district, Norfolk County, Acme Gas & Oil Co. has started two new tests for gas, one approximately 800 feet from the producer recently finished on the Frank Lymburner farm.

SOUTHWEST TEXAS FIELDS

(Continued from Page 38)

of the Saxet Field and last depth reported is 5,850 feet and coring a sand, but L. L. Smith's No. 1 Hunter, a half mile north of it, quit at 5,388 feet and plugged back to 3,368 feet where it set casing and is waiting to test. This 3,368-foot depth is something new in the field if it makes production.

Gulf Coast Oil Co.'s No. 1 Harrell, a mile north of the Houston Oil Co.'s No. 2 Rand Morgan reported last week completed as a gas well spraying about 30 bbls. of oil at 4,095 feet, has started to deepen. It extended the width of the Saxet Field a mile to the north for the sand at 4,095 feet. There is a probability that the deep drilling campaign in the Saxet Field is nearing an end at least for the present and since the Saxet Oil Co.'s No. 4 White Point Development Co. failed to get anything in the deep horizons in San Patricio County on the north side of Nueces Bay interest turns to the United Production Co.'s No. 1 Mayfield in San Patricio County and Jacob, Buzzini & Pickett's No. 2 Baldwin. The latter is considerably north of the White Point Field and not far south of the wildcat gas well brought in by the Aransas Oil Corp. some weeks ago on the Welder ranch. The Aransas Oil Corp. is getting ready to further develop its property.

OKLAHOMA FIELDS

(Continued from Page 34)

SE, Section 3-11-3w, was allowed to flow and made 5,482 bbls. of oil in six hours with an estimated 40,000,000 feet of gas a day. The well was bailed down several weeks ago but was shut in without any gauge. Champlin Oil & Refining Co.'s No. 1 Schilling-Bass, NE cor. SW SW, Section 10-11-3w, was completed and made 226 bbls. of oil in 15 minutes with 35,000,000 feet of gas a day before shutting in. The total depth of the well is 6,515 feet.

American Oil & Royalty Co.'s No. 1 Booker T. Washington Park, SW cor. NW SW, Section 35-12-3w, flowed 1,669 bbls. of oil the first hour with an estimated 52,000,000 feet of gas a day and was shut in. The well is the nearest producer to the business district and is located on land that belongs to the city. The sand was found from 6,274-6,357 feet.

The Champlin Oil & Refining Co.'s No. 1 Eckroat, NE cor. SW NW, Section 10-11-3w, on the west side of the field, was opened for a production test during the week made 2,966 bbls. of oil the first hour and 40 minutes and was shut in. The gas was estimated at 30,000,000 feet a day. The sand was found at 6,406-6,510 feet.

Danciger Royalty Co. and Anglo-American Petroleum, Ltd.'s No. 1 Burroughs, SE cor. SW, Section 10-11-3w, was allowed to flow a short time and was shut in. The owners estimated the well at 50,000 bbls. a day. It made 2,793 bbls. in two hours. The total depth of the well was 6,429 feet.

Noble County Operations

Operations are continuing at a steady rate in Noble County. Magnolia Petroleum Co.'s No. 3 Sumner, SW cor. NW, Section 4-20-1w, is a new rig. The same company's No. 2 Young, SE cor. SW NW, Section 22-21-2w, a recent completion, has been pinched to 100 bbls. a day. It made 786 bbls. of oil in 24 hours. Same company's No. 1 Hoffman, SW cor. SE SE, Section 16-21-2w, is shut down waiting for cement at a total depth of 5,030 feet. Southwest of Perry, the Sinclair Oil & Gas Co.'s No. 2 Waltermire, SE cor. SW SE, Section 33-21-1w, is shut down after spudding.

Creek County Completions

Creek County operations during the week were as follows: Wilson Petroleum Co.'s No. 1 fee, SE cor. SW, Section 31-16-9, in the Bristow area, was shut down at 3,070 feet. J. Winemiller's No. 1 Railway property, NW cor. NE SW, Section 32-17-12, in the Mounds area, found 5,000,000 feet of gas in the Glenn sand at 1,543 feet. It was drilling at 1,676 feet in sand with a showing of oil.

Whittington and others' No. 2 fee, SE cor. NW NE, Section 9-17-10, in the Kellyville area, found a showing of gas at 1,040-47 feet, and it was abandoned at a total depth of 1,068 feet.

Shamlin and Smith's No. 1 Newhouse, SW cor. SE, Section 31-16-10, found water in the Dutcher sand at 2,581-90 feet.

In the southern part of the State in Carter County, Frank Gouin's No. 1 M. E. Burton, C S half SW, Section 30-1s-2w, in the southeast part of the Tatums Pool, is a new location. The operators will skid the rig from No. 1 J. W. Burton, in the C SW NW, Section 30-1s-2w. The same operator's No. 1 J. W. Burton, C SW NW, Section 30-1s-2w, cemented casing at 2,180 feet, on top of an oil sand at 2,191-2,214 feet.

D. Phillips' No. 1 Lyle, NE cor. SE SW, Section 28-2s-2w, a semiwildcat, is shut down at a total depth of 1,185 feet.

Carter Oil Co.'s No. 2 Robb, SW cor. NW, Section 19-1s-2w, on the east side of the Tatums Pool, in Carter County in southern Oklahoma, made 1,210 bbls. of oil in 24 hours, it being one of the best wells completed in the pool for some time. The well flowed the first 16 hours of the production test. Production was found in a series of sands from 1,768-1,898 feet and the total depth was 1,948 feet.

The new producer will be offset by two locations, one on the south by Cox-Hamon's No. 1 Ratliff-Spears, NW cor. SW, Section 19-1s-2w, and the other by Frank Gouin and others' No. 1 M. E. Burton, C S half SW, Section 30-1s-2w.

Greater Seminole Production

The production from the Greater Seminole area for the week ending June 25 was approximately 184,782 bbls. The first 12 pools listed below comprise the Seminole area which averaged 132,974 bbls.

Pool—	Bbls.
Little River	24,535
East Little River	5,388
Carr City	13,822
Maud	2,465
Mission	9,105
Bowlegs	15,126
Earlsboro	18,010
South Earlsboro	4,765
East Earlsboro	18,670
Seminole	14,850
East Seminole	1,688
Searight	4,550
Total	132,974
Allen	11,380
Asher	655
Wanetta	6,005
Konawa	9,188
Sasakwa	2,190
St. Louis-Pearson	22,490
Grand total	184,782

Oklahoma City Shipments

The total shipments from the Oklahoma City Field for the week ending June 27 were 1,435,745 bbls. including the tank car shipments. The shipments by companies were as follows:

Company—	Bbls.
Champlin	36,941
Continental	63,801
Empire	304,787
Magnolia	9,908
Oklahoma	67,503
Operators	11,006
Prairie	6,117
Shell	83,310
Sinclair	327,612
Stanolind	409,390
Tidal	4,320
I. T. I. O.	66,664
Crude Oil P. L.	523
Anderson-Prichard	436
Petroleum P. L.	4,117
Century	10,965
Capitol P. L.	12,740
Wilcox P. L.	10,600
Total	1,435,745

The daily production and pipe line shipments from the Oklahoma City Field for the week ending June 27 were as follows:

Date—	Prod.	Wells	Shipments
June 21	148,836	90	203,221
June 22	153,431	78	192,836
June 23	197,633	86	210,476
June 24	161,949	90	221,761
June 25	144,487	93	210,421
June 26	163,082	98	197,844
June 27	162,349	78	199,196

Carter County

Frank Guin made location for No. 1 Burton, C S half SW, Section 30-1s-2w. Carter Oil Co.'s No. 2 Robb, SW cor. NW, Section 19-1s-2w, swabbed 1,210 bbls. from sand 1,768-1,898 feet. Trevelyn Oil Co.'s No. 1 Ratliff, NE cor. NW SW, Section 19-1s-2w, is dry and abandoned at 1,900 feet.

Creek County

Elm Oil Co.'s No. 1 Sancho, SW cor. NE, Section 15-19-7, is straightreaming 10-inch casing to 1,580 feet. Gilcrease Oil Co.'s No. 1-A Lindsley, NE cor., Section 35-17-9, is dry and abandoned at 685 feet. W. H. Whittington and others' No. 2 Char-co-te-tans, SE cor. NW NE, Section 9-17-10, has been abandoned at 1,068 feet. L. A. Carpenter's No. 1 Thompson, SE cor. NW SW, Section 22-17-11, has been abandoned at 2,132 feet.

Haskell County

Enterprise Gas Co.'s No. 1 McKinney, C SW NE, Section 10-9-18, is a dry hole at 1,290 feet.

LeFlore County

H. E. Dowd and others moved a machine in for No. 1 Smith, SE cor. NE, Section 17-3-22.

Marshall County

M. A. Neff and others' No. 1 Farris, C S half S half, Section 29-6s-7, has drilled to 1,110 feet and plugged back to 888 feet where it was abandoned.

Muskogee County

Taylor & Geiger's No. 1 Grayson, CWL NW NE, Section 16-15-15, is drilling at 765 feet. J. G. Graham's No. 5 Stidham, SW cor. NE SE NE, Section 11-14-18, is spudding. G. D. Robinson moved a machine in for No. 2 Brown, CNL SE NE, Section 18-13-16. E. W. Ladd's No. 1-A Grayson, CNL NW NW, Section 29-16-15, is dry and abandoned at 1,424 feet. H. L. Jolly's No. 2 Spaulding, SE cor. NE, Section 8-15-18, an old well deepened, has been completed for 25 bbls.

Okfuskee County

C. Fleming and others' No. 1 Fife, NW cor. NE NW, Section 12-10-11, is drilling at 875 feet. Atlantic Oil Producing Co.'s No. 3 Micco, NW cor. SW SW SW, Section 12-10-11, has been abandoned at 990 feet.

Oklahoma County

T. B. Slick estate made location for No. 6 Classen-Edwards, SW cor. SE SW, Section 3-11-3w. No. 2 Wepaco, CSL NW SW SE, Section 34-12-3w, Oklahoma City Pool, made 7,292 bbls. in four hours from Wilcox sand 6,243-6,529 feet. No. 5 Classen-Edwards, SE cor. SW SE SW, Section 3-11-3w, flowed 9,634 bbls. in 5½ hours from Wilcox sand 6,335 feet, total depth 6,534 feet.

Okmulgee County

A. Shelton's No. 2 C. Brown, C NE SW, Section 34-13-14, is a machine. W. L. Varner's No. 2 S. Butler, SW cor. NE NE SE, Section 16-12-14, is drilling at 500 feet. Clark and others' No. 1-A Hope, NW cor. SW SE, Section 26-12-12, is a rig on the ground. Tiffany Brothers' No. 1 Somins, SE cor. SW, Section 25-16-11, is dry and abandoned at 1,764 feet.

Pittsburg County

National Royalties Co.'s No. 1 Ross, NW cor. SW, Section 17-7-18, has been completed for 1,000,000 feet of gas in sand 1,810-2,125 feet.

Pontotoc County

C. E. Davis and others' No. 1 Dyer, SW cor. NW SE, Section 8-4-7, made 75 bbls. in sand 1,060-63 feet.

Seminole County

Magnolia Petroleum Co. moved the rig in for No. 3 Billington, SW cor. SE NW, Section 29-6-6, Konawa Pool.

DEATH TAKES HEAD OF INGERSOLL-RAND BOARD

William Laurence Saunders, 74, of Plainfield, N. J., chairman of the board of directors of the Ingersoll-Rand Co., died last Thursday, June 25, in Teneriffe, Canary Islands.

Graduating as bachelor of science from the University of Pennsylvania in 1876, Mr. Saunders took up newspaper work in Philadelphia. Two years later he became engineer in charge of dock construction at Black Tom Island, New York Harbor. He served in that capacity until 1882, meanwhile inventing a device for drilling, employing the tube and water-jet system now in popular use.

After going with the Ingersoll Rock Drill Co. he invented many other devices. Ultimately he became president of the successor company, Ingersoll-Rand, finally resigning to become chairman of the board.

Mr. Saunders founded the annual award for achievement in mining by the American Institute of Mining and Metallurgical Engineers. Twice mayor of North Plainfield, N. J., Mr. Saunders was prominent in Democratic politics as a member of the New Jersey State committee, a delegate to the national convention of 1924 and President Wilson's personal representative from New Jersey on the national campaign committee in 1916. He leaves two daughters, Mrs. Maxwell E. Perkins and Mrs. John E. Lancaster, Jr. He was a native of Columbus, Ga.

FAST ROTARY DRILLING

FORT WORTH, Tex., June 27.—An indication of the favorable drilling conditions encountered in East Texas is reflected in reports from Amerada Petroleum Corp.'s No. 1 U. E. and Catie N. Bumpas, which drilled surface plug last Monday and Thursday noon was making hole below 2,800 feet.

After setting surface casing at 260 feet, the crew of Carl Short, drilling contractor, made 965 feet of hole the first 12 hours. Progress was retarded somewhat after topping Pecan Gap chalk, but base of the formation was expected around 2,900 feet and operators hoped to reach the sand today.

Gulf Directorate Pays Tribute to Memory of Late Henry McGraw

PITTSBURGH, Pa., June 27.—Tribute to the memory of the late Henry McGraw of Tulsa was paid in resolutions adopted at a meeting of the board of directors of the Gulf Oil Corp. of Pennsylvania held here on Wednesday. The resolutions follow:

Resolved, that the directors of the Gulf Oil Corp. of Pennsylvania record hereby their sorrow in the death of Henry McGraw and express to his family their sincere sympathy in the loss which they have sustained.

Henry McGraw was associated with the Gulf companies for over 20 years. He was unfailingly loyal to the interests which he represented and was earnest, conscientious and thorough in the performance of every duty entrusted to him. He was a man of absolute integrity, of great courage, both moral and physical. Combined with a broad and comprehensive knowledge of the general situation, he was also personally familiar with every branch of the business entrusted to his care. He was a strict disciplinarian and insisted that those who reported to him perform their duties thoroughly and efficiently. On the other hand, he had a deep feeling of friendship for all of the men in his organization and never failed to do what he could for their welfare. He was respected alike by his friends and associates in the company and by all those with whom he came in contact in the daily performance of his duties. In his death the Gulf companies have lost a loyal, faithful and competent executive and his associates have lost a personal and true friend.

Resolved, further, that a copy of this resolution be sent to his relatives and that the secretary of the corporation be hereby directed to do so.

KANSAS FIELDS

(Continued from Page 35)

ding. Roth & Faurot's No. 1 Reidy, SW cor. NW NE, Section 8-32-8, has been abandoned at 1,045 feet.

McPherson County

H. C. Finefrock and others' No. 1-A Rolander, SE cor. SW SW, Section 30-18-2w, Ritz-Canton area, is drilling deeper at 3,046 feet. Grey & Bunson's No. 1 Dixon, NW cor. SW, Section 7-19-2w, is moving in. McPherson Oil & Gas Co. and Shell Petroleum Corp. made location for No. 3 Hill, C NE NE, Section 10-19-2w. No. 2 Fleming, C NW NW, Section 11-19-2w, is a rig. Harris & Haun staked location for No. 2 Overman, NE cor. SE, Section 20-19-1w. Shell Petroleum Corp. and others' No. 2 Johnson, SE cor. SW NE, Section 36-19-2w, has been completed for 867 bbls. in 12 hours on swab from Viola lime 3,400-14 feet.

Reno County

Madison and others made location for No. 1 Esau, NE cor. SE, Section 12-22-4w. Derby Oil Co. and Reserve Oil Co.'s No. 1 Goering, SW cor. NW NE, Section 1-23-4w, has been completed for 87½ bbls. in Wilcox sand 3,762-90 feet, total depth 3,890 feet.

Rice County

L. E. Cress and others' No. 1 Sharpe, SE cor. NE, Section 13-20-10w, was completed for a producer and shut in with no gauge after flowing 45 minutes. C. B. Davis' No. 1 Kelly, SW cor. NW, Section 22-20-10w, has been abandoned at 2,593 feet.

Rooks County

Stearns & Streeter and others' No. 1 Levingood, SE cor. SW NE, Section 11-9-16w, is dry and abandoned at 3,600 feet.

Russell County

Gilbreath and others' No. 1 Bratton, C NE, Section 33-11-13w, has been abandoned at 3,535 feet.

Sedgwick County

Magnolia Petroleum Co. is moving in tools for No. 1 McLaughlin, NW cor., Section 31-28-1w. Blackwell Oil & Gas Co.'s No. 1 Rounds, NE cor., Section 17-27-2, has been abandoned at 2,963 feet.

Stevens County

Texas Interstate Pipe Line Co. and McNabb made location for No. 1 Ham, C SW, Section 3-33-37w. No. 1 Renfrew, C SE, Section 7-33-37w, is also a location.

Sumner County

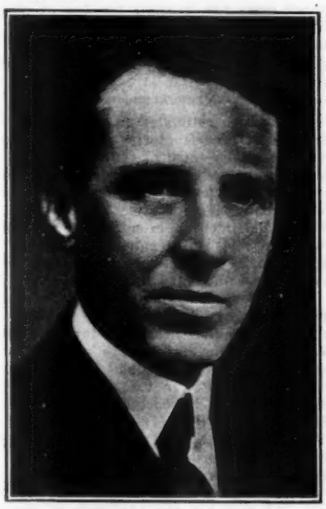
Trees and others made location for No. 1 Springgate, NE cor. SE SW, Section 6-34-2.

Greenwood County

The Prairie Oil & Gas Co.'s No. 2 Parrish, NW cor. SW NE, Section 16-24-12, has been completed for 134 bbls. in 12 hours from sand 1,582-1,620 feet.

AUTOMOBILE ACCIDENT FATAL TO C. R. EWING

Charles R. Ewing, director of the Imperial Oil, Ltd., in charge of manufacturing, died June 22 in a hospital at Buffalo, N. Y. His death was due to injuries received in an automobile accident June 17 near Chaffee, N. Y. Mrs.



Charles R. Ewing

Ewing who accompanied him escaped serious injury. Funeral services were held at Baltimore, Md., June 27.

Mr. Ewing was born in Baltimore, Md., in 1876. He started work as a stenographer at the Baltimore refinery of the Standard Oil Co. of New Jersey when he was 16. His rise with the company was rapid and in a few years he was general superintendent of the plant.

In 1920, he was made director and general manager of refineries of the Imperial Oil, Ltd., with headquarters at Toronto, Ontario. Under his direction the Imperial refineries in Canada have been enlarged with the latest refinery processes. He is survived by his widow, his mother and brother, John F. Ewing, who is superintendent of the Baltimore refinery.

C. O. Stillman, president of the Imperial company made the following statement regarding Mr. Ewing: "His loss is a most grievous one and the shocking accident which brought it about has stunned us so greatly that we cannot adequately comment on his great services to this company and the industry."

TO DRILL IN KENTUCKY

Trenton, N. J., parties are reported to have made arrangements for the drilling of five test wells in the western Kentucky area. Two of the wells will be drilled in the Kirkwood Springs area of Hopkins County, and the two outfits are moving to the locations, which were not named, and they expect to open up some new territory at close around 1,400 feet. Same parties will drill the three additional tests, one in Muhlenberg County, one in Christian County and the other in Webster County.

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If your absorption units, or heat exchangers and oil coolers, are not functioning efficiently because of muck, salt deposits, and basic sediment, investigate this successful Oakite method and the economies that you are sure to gain by it.

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Industrial Cleaning Materials and Methods

VARIABLE COST OF STEAM GENERATION

(Continued from Page 17)

powdered coal firing the power consumption is involved in the maintenance of proper draft conditions and no generalization will be here attempted.

For oil firing the power required for atomization will run from 2 to 5 per cent of the steam generated for steam atomization and 1 per cent, or possibly slightly under, for mechanical atomization[8]. In cold climates or even in the South with heavy oils additional steam may be required to keep the oil in fuel tanks mobile enough for pumping. Haslam and Russell[9] give a table from which the following is summarized:

COST OF ATOMIZATION OF FUEL OIL PER 1,000 GALLONS

Size—	Mechanical	Steam
150 horsepower	$4.15	$4.68
300 horsepower	3.05	2.95
900 horsepower	2.33	3.58
1,950 horsepower	1.78	3.27
4,500 horsepower	1.58	3.21

The above include steam cost, power cost, and fixed charges.

Condition of Tube Surfaces

The condition of the water surfaces of tubes and shells affects all fuels alike and is not affected by the class of fuel, if fuel is properly applied. The condition of the fire side of tubes is, however, directly affected by the class of fuel used and their condition in turn affects the efficiency of firing. Soot blowers are required for coal firing by any method to keep tube surfaces clean, but are not required ordinarily for oil or gas firing if method of fuel application be a rational one. Tests of hand soot blowers against mechanical soot blowers show that the better cleaning by means of mechanical blowers produces lower stack temperatures by 80 to 164 degrees. Each 20 degrees of stack temperature represents roughly 1 per cent in efficiency. Hence, in comparing coal firing to gas firing we may expect, except possibly in the larger plants with mechanical soot blowers, a lower stack temperature due to clean tubes of from 50 to 100 degrees, resulting in from 2.5 to 5 per cent fuel saving from this source. On a test on a 300-horsepower B. & W. boiler—to determine the efficiency of mechanical blowers—it was found that by using the blower every six hours, instead of once in every 24, as has been the practice with the hand jet, the average stack temperatures were reduced 110 per cent, the boiler efficiency increased about 4 per cent, and there was a saving of six hours labor of one man each 24 hours' operation[10].

Even with mechanical blowers there will be a reduction in stack temperatures due to cleaner tubes and a saving in the power required by such blowers. With hand lance cleaners a considerable labor saving is affected as indicated in the quotation above. The steam consumption of soot blowers per cleaning is[11]:

	Lbs.
H.R.T. boilers, hand blown	250 to 400
H.R.T. boilers, mechanical blowers	200 to 350
Water tube boilers, hand blowers	500 to 750
Water tube boilers, mechanical per 1,000 sq. ft. tube surface	160 to 240

The relative efficiencies of tube heat transfer, using natural gas as compared with coal, is applicable also to economizers and air preheaters in installations where such apparatus is used.

Draft Conditions

In many installations the output of an installation with coal fuel is limited by the available draft. In burning coal upon hand fired grates, reliance for air supply is usually placed upon natural draft supplied by the stack to pull the air supply through the fuel bed. In cases when the amount of such draft is not sufficient to operate boilers at ratings which might otherwise be developed with natural gas because of the lower pressure losses between atmosphere and combustion chambers, gas fuel may be able often to produce the higher ratings required and thus by the use of fewer boiler units gain considerable economies. There seems to be little published data on this subject, but most everyone familiar with conversions from coal to gas has had this experience. In normal, medium and large stoker installations natural draft is relied upon only to remove products of combustion from the furnace, whereas forced draft of sufficient pressure is employed in sustaining the loss through the grates and fuel bed. In some instances induced fans augment natural draft. By the use of natural gas both forced and induced draft fans may be reduced or entirely eliminated with a consequent saving of considerable magnitude.

Baffling Arrangements

The baffling arrangement that has been found most desirable for coal firing will in many cases be found poorly adapted to oil or gas firing. Since in oil or gas firing less excess air is required than is usual practice with hand and stoker fired coal plants, the volume of the products of combustion is less and with the same baffling arrangement as for coal the velocities of the gases would be lower. The heat radiating conditions for gas and oil are not the same as for an incandescent horizontal fuel bed. It often occurs that, in order to secure the combustion space necessary to produce greater boiler loads, a different firing point is required for liquid or gaseous fuels than for solid fuels. These various conditions often require a change in the baffling arrangement.

Size of Installation and Size, Type and Arrangement of Units

The percentage of radiation losses through boiler settings tends to decrease as the boiler size increases. The radiation losses for two boilers in a battery would be less, under the same load conditions, than for the same boilers set singly. The maximum efficiency attainable varies with the type of boiler. The effect of these factors is quite erratic and since they produce about the same effect for all classes of fuels (except that there are some types not adaptable to some fuels) no attempt will be made here to analyze them.

Condition of Brickwork

In small plants one of the most serious sources of fuel loss is through the infiltration of cold excess air through brickwork in poor condition. The losses with gas and oil firing for the same condition of brick work would be less than for coal because with the lower draft required there will be a lower differential in pressure between the atmosphere and the inside of boiler settings. A difference in pressure of 2 to 1 would make a difference of about 40 per cent in the amount of air infiltration. An excess of 5 per cent from the source might be reduced to about 3 per cent by the change in fuel corresponding to a change in efficiency of about one-half of 1 per cent. The proper procedure with any fuel is to stop the air leaks, but in many small installations the settings will not be maintained tight against infiltration.

Maintenance of Boilers

Maintenance charges for coal fired boilers will usually be found higher than for other fuels, oil being next in line, and gas the lowest. The simplest coal fired plant necessitates the use of equipment that is not required with gas. For hand or stoker fired installations grates are a necessity. The maintenance of such equipment is a function of the character of the fuel, the skill of firing, and of the quantity used. For a hand fired coal plant using about 2,000 tons of fuel per year the cost of grate maintenance will run from $20 to $150 or from $0.01 to $0.075 per ton of coal fired. Stoker maintenance varies greatly with the type of stoker used. The following maintenance costs are in cents per ton of coal fired[12]:

1. Step and slope overfeed	10	12
2. Step overfeed	11	14
3. Chain overfeed	6	10
4. Gravity underfeed	2.5	4
5. Horizontal retort underfeed	4	6

It has been estimated that the maintenance cost of refractories for gas firing is not over one-third of that for coal firing. Segregated maintenance costs on tubes are difficult to obtain. The soot forming and slagging effect of coal firing has a detrimental effect, however, on tube life and maintenance. Their effect upon stack temperature and efficiency have been commented upon previously.

A comparison is here presented from data in an article, "Operating Performances of Steam Generating Stations," by Vern E. Alden, assistant to the general superintendent of Consolidated Gas, Electric Light & Power Co., of Baltimore, Md., published in Electrical World on September 26, 1925. In Mr. Alden's article in Table 2, pages 644 and 645, he gives the performance data and operating and maintenance costs for 10 natural gas burning stations. Pages 636, 637, 638 and 639 list the performance data and operating and maintenance costs for 136 coal burning stations.

In order to compare coal burning stations with gas burning stations in regard to performance and costs of operation and maintenance, 10 coal burning stations were selected out of the 136, so that for each gas burning station there would be a coal burning station which would correspond closely as to net annual output. The annual plant use factor and annual load factor has a bearing on the items considered in the comparison. In general, the gas fired stations show higher values for both factors. The following figures were obtained by means of weighted averages:

1. Maintenance of boiler plant, natural gas	*0.0163
2. Maintenance of boiler plant, coal	*0.0389
3. B.t.u. per net kw. hr., natural gas	27,160
4. B.t.u. per net kw. hr. coal	30,876
5. Efficiency of coal fired plants compared to gas fired	88.1%

*Cents per kw. hr.

The above figures do not represent good practice with either type of fuel but do represent actual conditions.

Stack Losses

For all fuels stack losses consist of:

1. Heat loss due to raising theoretical dry air requirements from boiler room temperature to temperature of dry flue gases.
2. Heat loss due to excess dry air used.
3. Heat loss from water vapor formed by combustion of hydrogen content of fuel.
4. Heat loss from water content of fuel.
5. Heat loss from water content of air supply.
6. Loss due to incomplete combustion of fuel.

The losses from the moisture content of the air supply is small in any event, so may be neglected in this comparison. Due to the larger quantities of excess air with coal firing it will be greater with solid fuels than with liquid or gaseous fuels. The loss due to incomplete combustion of fuel need not be an important factor with any fuel, though it is often an appreciable amount for hand fired boilers, the formation of CO occuring at coal charging periods. On coal firing 1 per cent CO represents a loss in efficiency of about 4.5 per cent, but a loss of over 1 per cent efficiency, even in hand fired plants, would be exceptional. The heat loss from the water content of the fuel for liquid and gaseous fuels is negligible but may be an appreciable amount with solid fuels. For coal each per cent of water in the coal as fired represents about 0.1 of 1 per cent. Moisture content as fired will amount to from 1.1 to 17 per cent depending upon the amount of wetting or drying the coal received between receipt and firing, so the loss from water content will represent from 0.11 to 1.7 per cent of the heat value of the coal.

All fuels contain some hydrogen, in a combined form in coal, oil and natural gas, which upon combustion forms water vapor. Except in unusual cases where the stack gases are cooled to a low enough point to condense such vapors, the latent heat of vaporization of such water vapor formed is not recovered, but is lost through the stack. For the purpose of determining the inherent stack losses the products of combustion of three grades of bituminous coals, a medium grade of fuel oil, and a natural gas have been calculated. The losses due to dry flue gas for various ratios of excess air have been set out in comparative form in Table 4. It may be noted that the variation in coal analysis and heating value has but a very small effect upon the percentage of heat loss through dry flue gases, such losses with no excess air running from about 6.4 per cent at 400° stack temperature to over 12 per cent at 700° stack temperature. The range on oil for no excess air at the same temperature is 5.7 per cent to 10.74 per cent and for natural gas 5.53 per cent to 10.41 per cent. None of these fuels are fired, however, in usual boiler practice without some excess air and the heat loss to stack is increased by the heat content of such excess air. George I. Rhodes, vice president of Ford, Bacon & Davis, in a

TABLE 4—BOILER DRY FLUE GAS LOSSES OF FUELS AT VARIOUS RATIOS OF EXCESS AIR AND STACK TEMPERATURES

Excess air, per cent—	0		10		20		30		40		50		75		100	
	B.t.u.	%	B.t.u.	%	B.t.u.	%	B.t.u.	%	B.t.u.	%	B.t.u.	%	B.t.u.	%	B.t.u.	%
12,022 B.t.u. coal																
@ 400° Stack temp.	771.61	6.42	848.77	7.06	925.93	7.70	1,003.09	8.35	1,080.25	8.99	1,157.42	9.63	1,350.32	11.24	1,543.22	12.84
@ 500° Stack temp.	998.55	8.31	1,098.41	9.14	1,198.26	9.97	1,298.12	10.80	1,397.97	11.63	1,497.83	12.46	1,746.46	14.54	1,997.10	16.62
@ 600° Stack temp.	1,225.50	10.19	1,348.05	11.21	1,470.60	12.23	1,593.15	13.25	1,715.70	14.27	1,838.25	15.29	2,144.63	17.84	2,451.00	20.38
@ 700° Stack temp.	1,452.44	12.08	1,597.68	13.29	1,742.93	14.50	1,888.17	15.71	2,033.42	16.91	2,178.66	18.12	2,541.77	21.14	2,904.88	24.16
13,050 B.t.u. coal																
@ 400° Stack temp.	831.10	6.37	914.21	7.01	997.32	7.64	1,080.43	8.28	1,163.54	8.92	1,246.65	9.56	1,454.43	11.15	1,662.20	12.74
@ 500° Stack temp.	1,075.54	8.24	1,183.09	9.06	1,290.65	9.89	1,398.20	10.71	1,505.76	11.54	1,613.31	12.36	1,882.20	14.42	2,151.08	16.48
@ 600° Stack temp.	1,319.98	10.11	1,451.98	11.12	1,583.98	12.13	1,715.97	13.14	1,847.97	14.15	1,979.97	15.17	2,309.97	17.69	2,639.96	20.22
@ 700° Stack temp.	1,564.42	11.99	1,720.86	13.19	1,877.30	14.39	2,033.75	15.59	2,190.19	16.79	2,346.63	17.99	2,737.74	20.98	3,128.84	23.98
14,071 B.t.u. coal																
@ 400° Stack temp.	904.37	6.42	994.81	7.07	1,085.24	7.72	1,175.68	8.35	1,266.12	9.00	1,356.56	9.65	1,582.65	11.25	1,808.74	12.86
@ 500° Stack temp.	1,170.36	8.32	1,287.40	9.15	1,404.43	9.98	1,521.47	10.82	1,638.50	11.65	1,755.54	12.48	2,048.13	14.56	2,340.72	16.64
@ 600° Stack temp.	1,436.36	10.21	1,580.00	11.23	1,723.63	12.25	1,867.27	13.27	2,010.90	14.29	2,154.54	15.32	2,513.63	17.87	2,872.72	20.42
@ 700° Stack temp.	1,702.35	12.10	1,872.59	13.31	2,042.82	14.52	2,213.06	15.73	2,383.29	16.94	2,553.53	18.15	2,979.11	21.18	3,404.70	24.20
19,481 B.t.u. oil—21.18 Be.																
@ 400° Stack temp.	1,111.31	5.70	1,222.44	6.27	1,333.57	6.84	1,444.70	7.41	1,555.83	7.98	1,666.97	8.55	1,944.79	9.98	2,222.62	11.40
@ 500° Stack temp.	1,438.17	7.38	1,581.99	8.12	1,725.80	8.86	1,869.62	9.59	2,013.44	10.33	2,157.26	11.07	2,516.80	12.92	2,876.34	14.76
@ 600° Stack temp.	1,765.02	9.06	1,941.52	9.97	2,118.02	10.87	2,294.53	11.78	2,471.03	12.68	2,647.53	13.59	3,088.79	15.86	3,530.04	18.12
@ 700° Stack temp.	2,091.88	10.74	2,301.07	11.81	2,510.26	12.89	2,719.44	13.96	2,928.63	15.04	3,137.82	16.11	3,660.79	18.80	4,183.76	21.48
Natural gas—1,000 B.t.u. per cu. ft.—21,770 B.t.u. per lb.																
@ 400° Stack temp.	1,203.60	5.53	1,323.96	6.08	1,444.32	6.64	1,564.68	7.19	1,685.04	7.74	1,805.40	8.30	2,106.30	9.68	2,407.20	11.06
@ 500° Stack temp.	1,557.60	7.15	1,713.36	7.87	1,869.12	8.58	2,024.88	9.30	2,180.64	10.01	2,336.40	10.73	2,725.80	12.51	3,115.20	14.30
@ 600° Stack temp.	1,911.60	8.78	2,102.76	9.66	2,293.92	10.54	2,485.08	11.41	2,676.24	12.29	2,867.40	13.17	3,345.40	15.37	3,823.20	17.56
@ 700° Stack temp.	2,265.60	10.41	2,492.16	11.45	2,718.72	12.49	2,945.28	13.53	3,171.84	14.57	3,398.40	15.62	3,964.80	18.22	4,531.20	20.82

pamphlet entitled "Natural Gas for Steam Power" gives comparative data on the amounts of excess air required for burning various classes of fuels under different conditions of firing which may be summarized as follows:

Type fuel and method of firing—	Excess air %
Natural gas	7½ to 15
Fuel oil:	
Large furnace brick	30 to 40
Large furnace water walls	7½ to 15
Pulverized coal:	
Brick furnaces	40 to 70
Water wall furnaces	20 to 30
Stokers	50 to 70
Hand-fired coal	100 to 150

The data from Mr. Rhodes' publication may be checked readily by reference to hand books and text books on the subject. An excess air requirement for natural gas of 10 per cent is attainable in any but very small installations and a comparison of the dry flue gas losses may be made on this basis, bearing in mind that a lower stack temperature for natural gas may be expected due to clean tubes.

In Tables 3, 4, 5, 6 and 7 is shown also the heat losses from the water vapor formed by combustion of hydrogen in the fuel. This loss varies with the composition of coal at 400° stack temperature from 4.15 per cent to 5.52 per cent and at 700° from 4.62 per cent to 6.14 per cent. For fuel oil it has a narrower range, 6.96 per cent at 400° and 7.76 per cent at 700°. It is the highest for natural gas, 11.32 per cent at 400° and 12.60 per cent at 700°. Here again the reduction of stack temperature by clean tubes must be considered in making the comparison.

Radiation Losses

These losses will vary but little with the class of fuel used.

Fuel Losses to Ash Pits

With gas and oil firing ash pit losses are negligible or nonexistent. Losses due to this phase of firing with coal range for average operation conditions as follows as a percentage of heat value:[24]

	Per cent
(a) Powdered fuel	0.1 to 5
(b) Stoker	1.5 to 6
(c) Hand fired	2.0 to 7

The above losses are principally a function of: (1) rate of charging fuel, (2) chemical and physical properties of coal. (3) design of grates, and (4) air supply.

Heat in Ash

Removal of ashes at high temperatures results in an inherent loss ranging from 1.5 per cent to 4.5 per cent of the heating value of the coal,[25] compared with no loss for oil or gas fuel.

Load and Use Factors

These two factors condition the average cost of steam generation to a considerable extent. The expense of standby losses enters into the average cost of steam to a greater extent with coal and oil than with gas. Due to superior control of air supply at low firing and to more flexibility in accelerating and decelerating the rate of fuel charging, gas, oil and powdered fuel have a distinct advantage over hand and stoker fired boilers with banking and rapidly fluctuating steam loads. Wastage of surplus coal beds on grates from sudden calling off of steam requirements introduces a considerable fuel as well as labor loss. Gas gains advantage further with low use factor plants to the extent to which fuel handling, storage and preparation equipment enters into investment, labor and other steam generation costs. It should likewise be borne in mind that on most fans, fuel handling and preparation equipment, the energy consumption per unit of output increases as the use factor decreases.

Maximum Rating Required

Assuming properly adapted furnace chambers, firing with oil or gas permits of a higher boiler rating with acceptable efficiencies than with coal, due to superior heat transfer in tubes and to relatively reduced volumes of stack gases. Conversion of boilers to use natural gas as fuel has often been the direct cause of the postponement of adding boiler capacity to supply increases in steam requirements.

Ratio of Combustion Space to Developed Loads

This feature of steam plant design has a vital effect on boiler efficiencies, maintenance expense of refractories and tubes, and also smoke nuisance. The following represents present American practice of the ratio of furnace volume to square feet of boiler heating surface:[26]

Underfeed stokers (single end)	0.21 – 0.48
Forced draft chain grate	0.20 – 0.58
Pulverized fuel	0.46 – 0.95
Oil	0.20 – 0.60
Gas	0.20 – 0.60

The above is affected, of course, by the percentage of boiler rating to be developed. Furnace volume design is concerned primarily with securing complete combustion of fuel before entrance into tube passages. Generally speaking, good practice with natural gas calls for from 0.9 to 1.1 cubic feet furnace volume per developed horsepower. The majority of changes in furnace settings attendant upon conversion to natural gas are occasioned by existing improper designs for coal burning and by a desire to secure a higher boiler rating.

Time Required to Develop Rating

It is difficult to place a value on the ability of gas or liquid fuel to bring a boiler up to maximum load more quickly than with coal. Estimates range from values placed upon plant production curtailments in event of extreme steam requirements to a small increment of cost represented by added time in steaming up in the mornings and at noon hours. It will suffice here to point out that with natural gas as fuel the rate of fuel charging with proper air supply is controllable from no load to maximum load conditions practically instantaneously.

Feedwater Temperature

The type of fuel used does not have an effect ordinarily on feedwater except in instances where the additional air supply used with coal necessitates added auxiliary equipment steam which is in turn utilized in heating feedwater. The lowering of stack gas temperatures through the use of gas will reduce feedwater temperature when economizers are used. In the majority of cases, however, it may be said the feedwater is independent of the type of fuel employed.

Steam Temperature

This is dependent upon a number of factors including excess air, moisture in fuel, sojourn of gas in tube passes, condition of tubes, theoretical flame temperature of fuel used, percentage of radiant heat, and many others. With proper design of equipment any steam temperatures in normal practice today can be obtained with coal, oil or gas. In conversion jobs having superheaters properly placed for coal, it has been found that the use of natural gas fuel will result in a total steam temperature of from 3° to 15° lower unless the superheater location is changed. This condition is rarely a matter of importance. In ordinary practice it has been found that due to efficiency in heat transfer the difference in the temperature of steam and stack gases is from 20° to 100° less with natural gas than with coal.

Summary

In conclusion the foregeing emphasizes the fallaciousness of generalizations in the comparison of steam costs with the use of different types of fuels. Conversion factors in terms of cubic feet of commercial natural gas per ton of coal may be found from 12,500 to 23,000 on hand-fired boilers, from 16,000 to 26,000 on stoker-fired boilers, and from 19,000 to 32,000 on pulverized fuel installations. In addition to the conversion factor there are a number of other important factors in the establishment of "break-even" prices for different types of fuels. Determination of the relative merits of coal, oil and gas on any individual plant can be made only in terms of cost and worth per pound of steam.

Footnotes

1. From Steam Power Plant Engineering, G. F. Gebhardt, 6th ed., pp. 38-39-40.

2. Handbook of Petroleum, Asphalt and Natural Gas, Roy Cross, Bull. 25 of Kansas City Testing Laboratory, pp. 464-465.

3. Finding and Stopping Waste in Modern Boiler Room, Cochrane Corp., 3d ed., p. 99.

4. Engineering of Power Plants, Fernald and Orrok, 1927 ed., pp. 280-282.

5. Finding and Stopping Waste in Modern Boiler Room, Cochrane Corp., 3d ed., p. 392.

6. Steam Power Plant Engineering, G. F. Gebhardt, 6th ed., p. 241.

7. Elementary Steam Power Engineering, E. McNaughton, 1923 ed., p. 158.

8. Steam Power Plant Engineering, G. F. Gebhardt, 6th ed., p. 256.

9. Fuels and Their Combustion, Haslam and Russell, 1926, p. 492.

10. Finding and Stopping Waste in Modern Boiler Room, Cochrane Corp., 3d ed., pp. 292-293.

11. Steam Power Plant Engineering, G. F. Gebhardt, 6th ed., p. 109.

12. Engineering of Power Plants, Fernald and Orrok, 1927 ed., p. 197.

13. Pulverized Fuel, N.E.L.A. Publication No. 06, Dec., 1929. Statement of mill operation for 1928 at Middletown station of W. S. Barstow Co.

14. (a) Same as (13), p. 1. (b) Steam Power Plant Engineering, G. F. Gebhardt, 6th ed., p. 99. (c)Handfiring Soft Coal Under Power Plant Boilers, by Henry Kreisinger, Tech. Paper No. 80, Bureau of Mines.

15. Finding and Stopping Waste in Modern Boiler Room, 3d ed., Cochrane Corp., p. 597.

16. Same as (15), pp. 310, 406, 446 and 470.

TEXAS LEGISLATURE POLLED ON PRORATION

By Raymond Brooks

AUSTIN, Tex., June 29.—Forty-one out of 60 members of the Texas Legislature have declared themselves definitely in favor of an immediate special session to deal with oil production, in answering a poll by this correspondent.

Thirteen others were not opposed to the session, but noncommital on the question of calling it.

Six out of the 60 declared themselves opposed to it.

Forty-three members placed themselves on record for oil conservation enactments, to a single member's declared opposition. The lone member opposing a state conservation law said he favored a federal oil embargo as the remedy to Texas production woes.

Over a three-to-one support for a new conservation commission was recorded. Twenty-five members said they favored such a separate commission dealing with oil and gas, to eight against it. One member said he would favor it only if elective. Other members did not distinguish between an appointive and an elective commission.

The Howsley bill to limit production to "reasonable current market demand" was given the indicated support of 13 members, and was opposed by 11. It had, out of those answering the poll, approximately one-half the support as the proposal of a separate conservation commission, backed by a new state law.

The poll was made while the question of calling a prospective special session was undecided, and before the final collapse of the voluntary agreement in East Texas on the Cranfill unit production plan.

Many members who did not commit themselves fully on the creation of a conservation commission said their minds were open on the subject, the decision depending on the type and scope of the proposed body.

CHARLES CULLEN DEAD

Charles Cullen, continuously associated with the William Powell Co., Cincinnati, Ohio, since 1891, died in Latonia, Ky., last Thursday, June 25. Mr. Cullen always had charge of the Powell exhibits at the conventions of the National Association of Power Engineers and built up a wide circle of friendships.

PAINTS HELP TO FIGHT CORROSION IN TANKERS

Material progress is being made in combating the ravages of corrision in tankers, according to the Bulletin of the Standard Shipping Co. (marine subsidiary of Standard Oil Co. of New Jersey).

"Numerous suggestions have been made to prevent or eliminate as much as possible the ravages of corrosion, but, up to the present time at least, no adequate solution has ever been found," says the Bulletin. "It is generally admitted that the sulphur in the oil is one of the factors in producing corrosion, sulphur being a volatile material that on distillation passes over and reappears in the distillates, it being found, therefore, in refined products. Every effort is being made to extract sulphur by one or more standard processes, depending upon the way in which the sulphur is chemically combined in the oil, but complete extraction does not seem to be possible in practice. Unfortunately, it is in an active form in the sense that it combines readily with iron to form sulphide of iron, or with moisture to form sulphuric acids. The latter readily attacks, and therefore corrodes, steel structures. The sulphiding of iron in itself might not be very destructive, but another form of violent corrosion is introduced, chiefly on the floors of tanks, by the sulphide falling to the bottom and there setting up electrolytic corrosion. The logical and obvious way to prevent all this corrosion, aside from entirely eliminating the sulphur, which is not practicable, is to isolate the steel structure from contact with it.

"When the problem was first investigated, a paint coating seemed a possible remedy, but experiments along those lines were immediately faced with great difficulties. On the one hand, all the sulphur and acid-resisting paints and coatings then known were attacked by the oil, and, on the other, many of the oil-resisting coatings were not sufficiently acid-proof. Eventually a composition was evolved which fulfilled both of these requirements and proved successful in many branches of the oil industry, but failed to a great extent in the protection of steamers, due, it is maintained, to it not being water-resisting, and therefore unable to stand up under the trying conditions of alternate immersions, first in oil and then in ballast water. Both the water and oil contacts tended to break down the protecting surface, and, moreover, the practice of steaming out the empty tanks in order to gas-free them proved very detrimental to paint films. However, new paint products along the lines above described are now being offered, and, with the introduction of such modern methods of tank cleaning as the Butterworth system, by which the excessive steaming of tanks is entirely eliminated, it may be that the solution of the problem is rapily being reached. The subject still continues to be one of vital interest on account of its economic importance to the operator and owner of tank steamers, and therefore to the naval architect and the practical marine engineer as well."

BIG LAKE CONTRACT

PITTSBURGH, Pa., June 29. — Plymouth Oil Co., through its subsidiary, Big Lake Oil Co., has closed a contract with the Texas Pipe Line Co. by which the latter will handle a minimum of 5,000 bbls. of crude oil daily and a maximum of 25,000 bbls. daily from the Big Lake Field in Texas at the rate of 32½ cents a barrel. The contract involves a saving of 20 cents a barrel to Big Lake.

WILLIAM BARRETT DIES

CHATHAM, Ontario, June 27.—William Barrett, formerly of Petrolia, Ontario, died recently at Detroit in his sixty-ninth year. Barrett with his father and his brother, Charles, were active in oil production in the Petrolia and Sarnia Township fields for many years, the firm also being well known for the manufacture of valve cups.

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THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

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AM IN THE MARKET for standard steel 84 foot drilling rig and heavy duty rotary steel drilling rig. Also both standard and rotary drilling tools. Also casing in all sizes from 20" to 5⅞". Also steel tanks of various sizes. All equipment must be first class and very cheap. Address Box 467, Red Cloud, Nebraska.

WILL PAY CASH for 200 horsepower Fairbanks Morse used Diesel Engine and AC current generator. Southland Cottonseed Products Co., Kansas City, Mo.

WANTED TO BUY FOR CASH: Standard rig, complete including all tools, boiler and engine. Must be good as new. F. E. Dix, 1306 Pizzaro St., Coral Gables, Florida.

FOR SALE—EQUIPMENT

FOR SALE FOR LEASE
10,000-gals. tank cars coiled. 50 ton trucks. Victor Car line, 111 West Jackson Blvd., Chicago, Ill.

FOR SALE. Filter presses. All types and sizes. New and used. G. M. Kohler, 1013 East 8th St., Los Angeles, Cal.

INGERSOLL-RAND COMPRESSORS
With vertical intercoolers, good as new. (3) 10x4½x10 belt driven XOB, starting 1,000 lbs., working 750 lbs., cost new $2,141.00. (1) 11x5x10, XOB start. 750 lbs., working 400 lbs., cost $2,240.00. (1) 13x7x12, 300 lbs., 200 lbs., cost $2,585.00. Reasonably priced for quick sales.
MONTAGUE OIL CO.,
ZENORIA, LOUISIANA.

FOR SALE for a low price. A gasoline powered Sullivan Diamond Core Drill. Write Box E-492, The Oil and Gas Journal, Tulsa, Okla.

FOR SALE—Slightly used Ingersoll-Rand steam two stage, 250-pound air compressor. Piston displacement. 312 cubic feet per minute at 200 r.p.m. Complete with intercooler and receiver. Write Box E-456, The Oil and Gas Journal, Tulsa, Okla.

1 TYPE 10, 165 H.P. Direct Driven Bessemer Compressor, 1 Type 8, 80 H.P. same, 1 70 H.P. Bessemer Gas Engine, 1 8x8 Clayton Twin Compressor. All in A-1 shape and priced right. Nolan Sales Corp., 827 East First St., Tulsa, Okla.

THREE MODEL NO. 35-38 BUCKEYE DITCHING MACHINES, Backfiller and Cleveland Tamping Roller,—only been used a few months and guaranteed to be just as good as new. Sacrifice for half factory price. Write or call for inspection. M. Wenzel, 4029 South Benton, or Neal Smith, 7400 Main St., Kansas City, Mo.

FOR SALE—EQUIPMENT

RECONDITIONED PIPE AND CASING. All Sizes. Our Prices Are Right.
LEE MORRISON SUPPLY CO.
BARTLESVILLE, OKLA.

MAGNETOMETER—Practically new. Will sell for one-half cost price or will operate same on some workable basis. M. P. ROGERS, 915 HAMILTON BLDG., WICHITA FALLS, TEXAS.

200 Amp. Lincoln Arc Welder, 220/3/60. Practically new. Price $425.00. 100 Amp. Federal Butt Welder; 220 V. 60 cy. Complete. Excellent condition. $500.00. 12"x14" Chicago Pneumatic Air Compressor. $350.00. 46"x18' Niles Lathe, Quick change; $1,250.00. Also, large stock of lathes, shapers, mailing machines, pipe machines, bolt threaders; etc. Send for our list. Terms to suit.
CINCINNATI MACHINERY & SUPPLY CO.
26 West Second St., Cincinnati, O.

BUSINESS OPPORTUNITIES

DEEDED MINERAL interest spread covers 6 tracts one under 5,000 barrel well in Rusk County new field. Write for map. ¼ mineral rights 142 acres Bee County 1,200 feet from 450 barrel well $250.00 basis. 7,905.5 acres new 10 year paid up lease ¼ royalty same term Edwards County, Texas, in active line of play $1.25 acre. Stieren & Koenig, Alamo National Bldg., San Antonio, Texas.

CHEAPER THAN leases. Owner offering fee 400 acres Crane County near production. Jeff Smith, Nalle Bldg., Austin, Texas.

OIL located before drilling. Geophysical method. Toggodometer Instrument; take pay in oil. No oil, no pay, except traveling and testing expenses, 95 per cent accuracy. O. P. Coffin, Caddo, Tex.

CAN FINANCE legitimate deals requiring $2,500 or more. Corporations formed any state. Mail sales campaigns, booklets, etc. Coast Service, 314 W. Wilson Bldg., Huntington Park, Calif.

FOR SALE: Forty Barrel per day shallow oil production, 3 wells on 120 acres. No. 1 Well 588 feet (28 feet sand), No. 2 Lime Well 900 feet (4½ feet sand), No. 3 Well 600 feet (30 feet sand), in Southern Indiana. 350 barrel Steel Storage, 3,100 feet pipe line, power plant, all in excellent condition. Will sacrifice on account of depression. Property can be inspected any time. Address Box E-512, The Oil and Gas Journal, Tulsa, Okla.

JOBERT OIL DRILLING COMPANY offers fifty divided assignments interest nonassessable in drilling well on forty acre lease, mile and half from production Kilgore, Texas. Interest money back from first oil runs before company receives a cent. One thousand dollars per. Send money to Citizens Bank or 300 South Saunders St., Tyler, Texas. No stock or units but ownership interest. Total interest in seven-eighths lease one hundred. Jobert Petroleum Company, 300 South Saunders, Tyler, Texas.

OWN 700-BARREL REFINERY, new process and a proven success, unlimited possibilities. Will trade interest in refinery for interest in production and move refinery to location. Prefer New Mexico. Write J. L. Havins, Box 84, Mexia, Tex.

EAST TEXAS DEFERRED OIL PAYMENTS
Under big producing wells, Gregg and Rusk Counties, will sell at liberal discount. J. O. Garlington, Route 2, Longview, Texas.

I HAVE A FINE GAS well and plenty of acreage 5 miles from market at 30c per 1,000 cu. ft. I want a partner to help pipe the gas. Robert Gaddie, Campbellsville, Ky.

NATURAL Gas or petroleum accurately designated from the surface by new geophysical method for expenses and interest in production. Write Oil & Gas Reports, Inc., 428 Union Trust Bldg., Pittsburgh, Pa.

ASSOCIATES WANTED
Need $10,000.00 for extraordinary "Wildcat" venture. Write Box E-516, The Oil and Gas Journal, Tulsa, Okla.

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CURTIS BROKERAGE COMPANY
dealers in
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Drilling, Production, Gasoline and Pipe Line Departments.
List your surplus with us.
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S. O. Curtis, P. O. Box 1214.
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HAVE MADE LOCATION, Oklahoma City Field, offsetting 41,000 bbl. Wilcox well. Will pay a few investors $10,000 out of first oil for $5,000 cash invested, as well progresses. Write Box 489, Shawnee, Okla.

PARTNER WANTED to assist in organizing a company to explore large blocks of prospective Oil and Sulphur lands in the Texas Gulf Coast. Prefer man who has connections with northern States and Canadian Paper and Rubber Manufacturers. Will arrange interview and inspection of properties. References exchanged. R. T. S., 211 S. High St., Longview, Texas.

WANT PARTY to assist in financing test well on 1,200 acre lease located within 12 miles of 15,000 Bbl. GUSHER in Anderson Co., Texas, close to pipe lines and R.R. Good geological report and in direct trend of large production. Will give 50/50 interest in entire lease for QUICK ACTION. Box E-506, The Oil and Gas Journal, Tulsa, Okla.

CAPITAL furnished worthy oil companies. Send full details your requirements to Box E-513, The Oil and Gas Journal, Tulsa, Okla.

HAVE PERFECTED VERY SUCCESSFUL system for locating oil and gas structures. Charges reasonable. Write Box E-520, The Oil and Gas Journal, Tulsa, Okla.

$12.50 BUYS DEED part oil, 2 Oil Royalties City Pool. Ed Milam, Dept P., Oklahoma City, Okla.

FOR SALE—MAPS

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MAPS
Send for list.
THE M. H. HUNTER. CO.
Roswell, N. Mex.

OIL DEVELOPMENT maps, any county in Oklahoma, 75 cents each; lease block and detail maps. Write for map list. Lindsay Map Co., Franklin Bldg., Oklahoma City, Okla.

M-A-P-S

We have the only complete line of general area, lease ownership and oil development maps in East Texas.

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Wichita, Kans.

NEW MEXICO OIL MAPS — New white print with key explaining present activities in Torrance and surrounding territory just completed. Price $1.50. New white print, any county, $1.00. Staplin & Staplin, Santa Fe, New Mexico.

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CAPITAL: An exp. dependable broker will aid in financing projects of merit. Amster Leonard, East Orange, N. J.

CAPITAL—Call or send facts about high grade oil projects to James E. Miller Co., Room 200, New Brady Hotel, Tulsa, Okla.

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WE CO-OPERATE in securing capital and guarantee to repurchase your securities. Send facts to the Stow Security System, 2057 Center St., Berkeley, Calif.

JOHN MORRIS, 3608 WARREN ST., PHILADELPHIA, PA., invites full facts first letter from capable parties planning negotiation of reasonable capital support for undertakings distinctly of higher order. Use registered mail, safeguard data.

SOUND PROPOSITIONS seeking capital for development or expansion send details. S. I. C., 82 Wall Street, New York City, N. Y.

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ORDER your oil and gas lease blanks from our large stock of forms. Leases, releases, agreements, etc. Prompt shipment. The Hutchinson Office Supply & Printing Co., Hutchinson, Kans.

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Before disclosing your invention to anyone, send for blank form.
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INCORPORATE YOUR BUSINESS. Delaware State Laws. Many advantages. Cost $46.50. Write Today. Free information. Dept. 16, Corporation Fiscal Co., Wilmington, Del.

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Repairs and Parts for International Oil Field Trucks—Prompt Service.
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WONDERFUL
EIGHT THOUSAND ACRES
KANSAS RANCH—FORECLOSED.
Was sixteen dollars—now six fifty per acre. Write today.
J. P. THURMAN
601 Schweiter Bldg.,
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Create and Build Sales

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OIL LEASES AND ROYALTIES
Bought and Sold.
In the Hobbs Pool
Lea County, N. Mex.
A. L. Gurley, Clovis, N. Mex.
P. O. Box 211 Phone 392.

MINERAL DEEDS—LEASES
Mineral deeds under major company leases or accompanied by leases. Stevens-Morton County area, Ness-Trego-Gove area in Kansas and Beaver-Texas Counties, Oklahoma area.
J. W. SAIN
310 Brown Building
Wichita, Kansas.

KETTLEMAN HILLS
320 ACRES in the North Dome Area where the Superior's Huffman wells, Petroleum Securities' Felix wells and Associated's Whipley wells are producing the greatest flow of high-gravity oil in California.
STANDARD OIL COMPANY
Owns the land joining this 320 acres on three sides. Each completion of above large wells tends to prove this land.
UNION OIL COMPANY
Purchased a half interest in an oil lease covering 160 acres in this area for which it is reported they are paying eight million dollars or $100,000 per acre—mind you, this is just for an oil lease.
This 320 ACRES is owned outright, it is not leased and we have an outlook of receiving that kind of money for an oil lease plus the money to be received from production by Royalty retained.
I NEED MONEY
Therefore, I will sell a portion of this valuable holding at excursion rates. To the right parties I may sell a half interest. Good stocks and properties will be considered as part payment. A. E. WRIGHT, 406 SUBWAY TERMINAL BLDG., LOS ANGELES, CALIF.

10,000 Acres—Yalobusha County, Miss. 7/8th leases for well. 20 mos. free rentals 25 cents. Fine report. 217 Court Street, Memphis, Tennessee.

MARKET FOR TEXAS OIL WELLS. Leases. Royalties. H. Roscoe Burt, 825 Wilson Bldg., Dallas, Texas.

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AM SPECIALIZING in Texas Panhandle gas production royalties and leases. Business is good, the reason is am making prices in line with conditions and handling a line we have a home market for, and the best investments in U. S. today. Thirty years in business here. Write E. B. Reeves, Alanreed, Gray County, Texas.

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MARKET FOR TEXAS OIL WELLS. Leases. Royalties. H. Roscoe Burt, 825 Wilson Bldg., Dallas, Texas.

LARGE OIL MAP 14 STATES, showing late oil and gas developments, given free with yearly subscription to "THE ROYALTY NEWS." Current issue contains detailed statistical analyses large royalty companies earnings, income, expenses, etc. Also other valuable features. Remit $2.00 now. Your subscription will start with current number and your large map will be mailed at once. Write 618a Tulsa World Building, Tulsa, Okla.

MID-CONTINENT OIL ROYALTIES at reasonable prices and with assurance of safety. Past record "Chicago dealer since 1920" indicates quick return of principal and handsome profit. Write me. J. A. Wolf, 208 South LaSalle St., Chicago, Ill.

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ROYALTIES—PRODUCTION

MID-CONTINENT OIL ROYALTIES
Royalty Sales Company
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Form shows rental record, mortgage record, expenditures, sales record, tax record, well record, monthly production record. All on one sheet; size 8½"x11"; punched to fit standard ring binder. Convenient for desk or brief case. Sheets—$5 per 100; fine leather binder, $5.25; leather tabbed index, $1.20. Order this complete record today. Know what you own and its condition.

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ROYALTIES on structure, under drilling wells, Stafford, Ellsworth Counties, Kans. Franklin, Gregg, Rusk, Upshur and other East Texas areas. Fast, dependable service for brokers and investors, in United States and Canada. James R. Haynes, Grantville, Kans.

$12.50 buys deeds, part oil, two Oil Royalties City Pool. Ed Milam, Dept. W, Oklahoma City, Okla.

ROYALTIES—PRODUCTION

PRODUCING ROYALTIES
Constitute the Best Form of Oil Investment.
I HAVE THEM EVERYWHERE.
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WILL PAY CASH for producing Royalties anywhere. Send full information. Merrick C. Ham, Pres., Lamont & Co., Ltd., 1107-8 Bartlett Bldg., Los Angeles, Calif.

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McPherson, Kansas.
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Modern fire-proof Hotel. Rooms $1.50 up

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PRODUCTION SUPERINTENDENT with technical training and twelve years practical experience in various fields. Would like to make connection with reliable company about October first. Address Box E-511, The Oil and Gas Journal, Tulsa, Okla.

LAND AND LEASE MAN
College graduate, age 32, several years oil and gas experience, checking and buying leases and producing properties. Excellent references. Write Box E-521, The Oil and Gas Journal, Tulsa, Okla.

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One point borders and ten point capitals are allowed, larger type not accepted.

Changes in copy must be in our office 10 days in advance of publication date.

Mail your advertisement to the Largest Classified Section in the Oil Industry.

THE OIL AND GAS JOURNAL
TULSA OKLAHOMA

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With Gas-Lift and Drafting experience desires connection with oil company. Write Box E-502, The Oil and Gas Journal, Tulsa, Okla.

HELP WANTED

I NEED A SALESMAN to sell Oklahoma oil royalties and land. My plan would place you in business for yourself. Write Box E-493, The Oil and Gas

SALESMEN WANTED: Lea Co. N. M. leases and royalties, prices right, terms easy. Write Fred B. Manley, Roswell, N. Mex.

OLD LINE established refining company three refineries capacity, twenty thousand barrels daily requires services of sales-manager to handle fuel oil and gas oil production. Only highest type man presently or recently employed with established record of accomplishments who can produce immediate business in large volume need apply. Write P. O. Box 1929, Tulsa, Oklahoma, giving full details and personal interview will be arranged if thought desirable.

East Is Aroused by Russian Reports

Rumored Contract With Detroit Marketer and Invasion of New York Area. Seaboard Market Continues Soft

By A. E. Mockler

New York Bureau, The Oil and Gas Journal, Rooms 1919-21, No. 154 Nassau Street

NEW YORK, June 29.—East Coast market circles were aroused this week by a report that the Soviet Naphtha Syndicate has contracted with an independent marketer in the Detroit area for a reported delivery of 350,000 bbls. of Russian gasoline and that an additional quantity of the Russian product is offering for delivery in the New York area at a low price. The original report on the Detroit sale had it that the gasoline would enter the United States via Philadelphia, and the trade was at first inclined to discount the transaction, as the tanker and rail freight from the Black Sea to Philadelphia and thence via tank car to Detroit would aggregate, with handling charges, in the neighborhood of 5 cents per gallon. Later reports, however, made it clear that the gasoline would move from Baku to Detroit by the all-water route, through the Great Lakes, in which event, shipping men declare, the freight charges would not exceed 2 cents per gallon. The reported laid-down price in Detroit is 3½ cents per gallon, which would mean an extremely low netback in Russia, and would tend to substantiate the belief of prominent oil men here that the transaction, if made as reported, is more or less a propaganda move on the part of the Soviet. The reported buyer in Detroit refused to confirm the purchase attributed to his concern, but some well-posted traders in export circles here are inclined to believe that the deal has been made, while others are just as firmly convinced to the contrary.

Russia is also reported offering between 15,000,000 and 20,000,000 gallons of gasoline for delivery in New York at a price between 4¼ and 4½ cents per gallon, but thus far none of the Soviet motor fuel has been reported placed here. It is generally believed, however, that the Soviet oil trust would have to go under the 4-cent level to attract local buyers.

Reports of renewed selling activity by the Soviet in American markets has revived talk of an embargo against imports of Soviet oil into this country and it is probable that any substantial movement of the Russian product here would result in a determined drive for such an embargo on the part of the American oil industry.

East Coast refined products markets showed continued softness during the past week. Principal factors reduced their refinery gasoline quotations in the New York harbor area to a general level of 5½ cents per gallon in tank car lots, with smaller interests reported booking business at 5¼ cents and under. Demand continued to improve, but the market remains plentifully supplied.

Other refined products, with the exception of cylinder oils, which eased off further, and kerosene, which was cut by leading sellers, were without quotable change for the period.

Refinery Gasoline

U. S. Motor gasoline showed an easier undertone during the week under review, although the posted price range continued unchanged at 5½ to 6¼ cents per gallon in tank car lots at refinery terminals. The chief feature of the week was the cut of one-quarter cent by Standard Oil Co. of New Jersey, bringing its tank car price down to the prevailing level of 5½ cents per gallon quoted by a number of other sellers. Following this action by Jersey, other major sellers, some of whom had been quoting around the 6-cent level in the open market, although meeting inside prices on spot business, also reduced their "official" prices to the 5½-cent level.

The statistical position of the East Coast gasoline market continued to show improvement, in direct contrast to the actual market trend. Stocks of gasoline held by refiners in East Texas territory as of June 20 totaled 7,655,000 bbls., a drop of 177,000 bbls. for the week.

Jobbing demand for gasoline continued active, and, although practically all of the buying was for immediate shipment, distributors were coming into the market for replacement supplies with more regularity. Although there are more sellers in the New York harbor market than was the case last year at this time, a number of the principal factors report that volume is beginning to rise above comparable 1930 totals, and it appears probable that the summer motoring season will be entirely satisfactory, from the gallonage standpoint, although so far as prices are concerned, the outlook is distinctly unfavorable.

East Texas gasoline continues to play no small part in the eastern market, and it is believed that by midsummer several of the new refining interests operating in the East Texas area will be active sellers in the cargo market in New York and at other points along the Atlantic Seaboard. These sellers are offering motor fuel of good quality, and at a distinctly competitive price, and it is evident that their operations for the remainder of the year will cause some of the larger factors active in the East considerable annoyance.

Low-priced gasoline from the New York area has been shipped into Philadelphia territory in a large way during the past week or so, and the Philadelphia market has become badly demoralized as a result of this condition. Large operators are keeping in close touch with the situation at principal marketing points along the seaboard, and it is probable that coastwise shipments of motor fuel will be unusually active this summer.

Leading refiners in the Atlantic Seaboard territory are continuing to restrict their throughput as much as possible, with the obvious intent of further reducing gasoline inventories and building up their cash position.

Increasing refinery operations in East Texas have automatically given the Gulf Coast area an "economic embargo" on imports of gasoline from South America, and during recent weeks the Atlantic Coast has been the recipient of virtually all of the country's gasoline imports. The rapid development of refining capacity in East Texas has forced importing companies to restrict imports of refined products to an extent considerably greater than earlier plans had contemplated, it is reported.

Sharp competition is reported in the jobbing gasoline market where barge loads are involved, and the posted price of 5½ cents per gallon on tank car lots is being shaded by a substantial margin in barge lot sales.

Tank Wagon Gasoline

In keeping with an evident policy of permitting local tank wagon and service station markets to readjust themselves as required by local competitive conditions, the weak refinery market in local territory has not been accompanied by any general revisions in posted tank wagon or service station quotations. There is still widespread irregularity through virtually the entire territory, although as consumption shows a seasonal increase, leading marketers are making an energetic attempt to restore more stable conditions to the general situation.

It is intimated that early action will be taken by some of the leaders in the industry to make the American Petroleum Institute's code of ethics more effective in marketing operations, and restoration of many of the code's provisions to the marketing programs of the major companies is regarded as probably the most constructive development which the industry may be expected to witness during the summer months.

Gallonage has shown a sharp gain in eastern territory during the current month, and refiners and marketers expect their consumption curve to show further sharp acceleration during July. Current retail gasoline prices are the lowest in years, and notwithstanding the business depression which is still marked in some lines, it is not expected that the volume of motoring will show any substantial lessening during the summer months.

Fuel Oil

Spot market conditions showed no important modifications during the week. Refiners continued to quote bunker "C" at 85 cents per barrel, bulk, at refinery terminals, and reported a good contract movement.

East Coast fuel oil sellers specializing in marine business are showing some concern over the likelihood of intensified Russian competition for bunkering business at European ports. Hitherto, Russia has devoted most of its foreign marketing activities to gasoline and kerosene, but is now reported looming to the fore as a formidable competitor in European fuel oil markets. Recent reductions in bunker "C" and Diesel oil prices at East Coast ports, to the lowest levels on record, were dictated primarily as a step toward combating Russian competition steamship business, it is learned.

Kerosene

Further softness developed in the market during the week, water white in tank car lots being reduced to 4¾ cents per gallon at refinery terminals. The new price is one-half to three-quarters cent per gallon under previously posted prices of major sellers, and reflects both the dwindling demand for kerosene at this season of the year, and the competition of Pennsylvania and other sellers. With kerosene available at 3½ cents per gallon at the Gulf, leading factors here recognized the impossibility of maintaining the 5¼-cent level.

The cut in the refinery kerosene market has not yet been reflected by any revisions in tank wagon schedules, although the market tone is easy, and leading marketers are expected to lower their quotations in the near future.

Lubs

Buying of cylinder stocks picked up somewhat during the week, but the market tone is still rather unsettled, and buyers hesitate to make forward commitments pending the restoration of some semblance of stability to the price basis. Spot 600 steam refined was off fractionally during the week, offering at 15½ to 16 cents per gallon, against the former range of 15¾ to 16 cents. Bright stocks were also weaker, with light at 24¼ to 24½ cents, off three-quarters cent, and dark at 23½ to 24 cents per gallon, representing a decline of one-half cent for the period. Other grades were unchanged.

Industrial demand for red and pale oils was showing some signs of improvement, consumers in the textile trades in particular drawing stocks in slightly better volume. Export demand for these oils was lagging, however, with sellers confronted with the necessity of sharp price concessions to stimulate foreign buying interest.

Weakness in the wholesale lub oil market is being reflected in the retail channels, where service station prices for automobile oils are generally lower.

Diesel Oil

Refiners are quoting the market unchanged at $1.55 per barrel, bulk, marine terminals, and a good movement is reported. Large interests in the shipping industry are drawing stocks of Diesel oil against contracts in substantial quantities, and movement is fully up to expectations for this season of the year.

Growing interest is being shown by refiners in the steadily widening domestic markets for Diesel oil, and it is reported that gallonage is steadily widening in this field.

Gas Oil

Routine trading was again in evidence last week, with the market unchanged at 4 cents per gallon, tank car lot, f.o.b. refinery, for 28 plus recycled oil. Gas manufacturing companies are taking gas oil in substantial quantities, but this branch of the gas oil business is suffer- as well as from the increasing competition of natural gas, which is becoming quite a factor in some sections of the East.

One of the largest utility companies in New York State, outside of the metropolitan area, is now conducting a survey to determine the possibilities of supplanting its manufactured gas with natural gas to be drawn from the Tioga and surrounding gas fields.

Export Market

A cargo of 6,000 tons of 64-66 for July shipment was sold out of the Gulf early in the week at 3.60 cents per gallon. The cargo is destined for France, and was sold by a major company. Considerable export gasoline business is in the market for second half July and August shipment, but sellers are holding firm at 3¾ cents per gallon and buyers are endeavoring to beat the market down to 3½ cents. It is considered likely here that some of this business will be closed at around 3.60 cents.

East Texas crude for export was offering during the week at 55 cents per barrel, vessel, Gulf port, but no additional trading was reported. Thus far, about eight cargoes, averaging between 50,000 and 60,000 bbls. each, have been sold for export, and all of this oil is scheduled for shipment prior to August 1, indicating that further export buying of East Texas crude is likely to develop in the near future.

A cargo of 5,000 bbls. of Venezuelan crude was booked for export during the week at 56 cents per barrel, ship, and a cargo of 9,000 tons of Panuco, Mexico, heavy crude sold at 46 cents per barrel, port, plus the tax of 13 cents per barrel.

Kerosene is still nominally held at 3½ cents per gallon, Gulf, with no large lot trading reported during the week.

Paraffin Wax

Consumers were not in the market for stocks in a large way during the week, and trading was rather featureless at unchanged prices.

Domestic buyers have been holding down their purchases to bare requirements in recent weeks, but with the month-end inventories out of the way during the coming week, it is expected that these consumers will be in the market for stocks in larger quantities shortly.

Export demand was rather limited on both crude scale and fully refined grades during the week.

Petroleum Exports

Irregularity characterized export move-

(Continued on Page 114)

Chicago Market Shows More Strength

Small Order Buying Involves Shopping Around, as Tank Car Supply, Which Had Seemed Unlimited, Gives Evidence of Playing Out

By Robert C. Conine
Chicago Bureau, The Oil and Gas Journal, 6 North Michigan Ave.

CHICAGO, June 29.—The gasoline markets in the Chicago district were in a decidedly stronger position at the close of last week when continuous small order buying began to require a good deal of shopping around as the tank car supply, which seemed unlimited earlier in the month, gave evidences of playing out. A 100-car order to a jobber for delivery over July went to a refiner Friday at 2¼ cents a gallon after much canvassing on the part of the buyer. Earlier in the week the Benzoline Motor Fuel Co. purchased its 100-car supply for July at 1.92 cents. The price to Benzoline is perhaps not a representative market figure as this company has always enjoyed at least an eighth of a cent price concession.

That the upward movement of the gasoline markets is actually based on the law of supply and demand and not upon any tacit agreement among the marketers and refiners that gasoline should bring a better price is made quite plain by the experience of one major refiner who lost a three-car order last week when a competitor went 62/100,000th of a cent a gallon below the other's bid and got the order. The buyer saved a total of 15 cents on the three cars and the losing bidder lost what little faith he had in the possibilities for a bit of altruism to point the way out of the market difficulties.

Refiners to Buy or Increase Runs

Several of the major refiners have been buying gasoline steadily in comparatively small lots of 35 cars or more in this district. These interests are favored by sellers much more generally now than they were a few weeks back when it seemed that refiners were principally interested in getting their material out of the way. Price concessions of an eighth of a cent or more are commonly made to these buyers. Before the tank car price market improvement Saturday one large refiner bought 60-62 gravity, 400 endpoint gasoline at 2⅛ cents. A considerable quantity of gasoline is reported to be reaching refiners in Kentucky and Ohio from the Chicago district. One Ohio refiner stated that he would have to increase his runs to stills immediately or greatly increase his gasoline purchases because these stocks have grown very low.

One of the major companies figuring most prominently in fuel oil and gas oil marketing, is meeting the problem of increased gasoline demand without increasing its crude oil runs to stills. Shell Petroleum Corp. is now actively pursuing a policy of cracking fuel and gas oils to serve the double purpose of increasing its motor fuel supply and reducing its stocks of extremely sluggish material.

Attitude Among Majors

Those who have wished to see a drastic climax to the tank car gasoline markets have been disappointed by the Fabian tactics of the larger interests. It is pointed out that while there are at least five major refineries with a total daily crude oil capacity of 202,000 bbls., and a total daily cracking capacity of 125,000 bbls., in the Chicago district, the price-cutting initiative has in every instance come from smaller refiners, most of whom were forced to equalize a freight disadvantage of 2.38 cents or more. Had these majors desired to "call for a showdown," it is further pointed out the price could have been brought down to 3.38 cents, delivered in Chicago and exclusive of inspection fee, and this would mean a net back to an Oklahoma refiner of 1 cent or less.

The slight increase in gasoline market prices last week is in line with the policy most generally favored among the refiners and marketers. Successive increments of an eighth of a cent each week, it is believed, will do more to place the gasoline markets on a firmer and higher level than sudden jumps of a cent or more. It is felt that any tendency to move the prices upward too rapidly will result in larger orders being placed and longer waits between orders. The hand-to-mouth buying policy appears to stand in a better light now than when it replaced that of larger orders to be delivered over longer periods. It has at least served to keep the markets active and in a position to register promptly any real improvement.

If gasoline prices continue to improve during the principal consuming months of July, August and September, it will leave the refiners and marketers in a fair position at the close of the motoring season when prices may be expected to sag. The higher tank car markets will be reflected in the next quarterly statements of the oil companies and this is much to be desired.

Filling the Great Lakes Gasoline Line

The Great Lakes gasoline pipe line will have a total capacity of 94,600 bbls. when it is completed. The extension from Des Moines to Chicago will hold 13,000 bbls., and the continuation to Milwaukee will have a capacity of 4,200 bbls. One of the members of the pipe line said last week that withdrawals of gasoline required from him to help fill the approximately 4,000,000-gallon capacity line had at this period of brisk demand left his gasoline in storage at a low level. The line is expected to begin delivery of gasoline into Chicago about the middle of July.

Although there is a tendency, one might say a grim determination, to discount any figures presented to reflect producing and refining activities in the areas which have accounted for most of the cut price materials, oil men in the Chicago district were visibly cheered by the A.P.I. reports which showed that nearly 1,500,000 bbls. less gasoline was in storage last week than the preceding week, and that there was a decline of 27,600 bbls. in the quantity of crude oil run to stills.

Although the past week witnessed the appearance of confirmatory announcements from generally accredited sources in respect to the reports that Russia is intent upon entering the gasoline markets of the United States as near to Chicago as Detroit, the refiners and marketers of the district have not shown the slightest indication of alarm. One of the larger refiners stated that the Russian menace is much less a factor than the Texas menace.

Freight Situation

Information that has been released in connection with the proposed 15 per cent increase in freight rates, indicates that the railroads are more interested in meeting truck competition than pipe line competition, as the emphasis appears to be on short hauls. The railroads have petitioned the Interstate Commerce Commission to allow the increase and at the same time leave the road clear for price adjustments which may be called for by competitive conditions. The railroads have been given until the middle of October to put into effect reduced freight rates on petroleum products.

School books were set aside Friday until September, and the "hottest summer since 1913" has inspired a large number of employers to close their establishments all day on Saturdays. This week-end will probably break all records on gallonage.

In Chicago the price of Stanolind Blue gasoline was cut 1 cent Saturday to 10 cents, including 3-cent tax. All of the retail marketers met the reduction with Shell Petroleum Corp. moving down half a cent to 11.5 cents, with tax, on its 60-62, 400 endpoint gasoline of 60 octane number. Earlier in the week some of the larger marketers had made localized reductions to meet trackage station competition. At Gary, Ind., a tiff with the trackage station operators brought the price down to 5.9 cents, excluding tax. At Detroit, where the third grade price is 6.5 cents, Shell increased its service station price half a cent to 8 cents. Other points where Stanolind Blue has been reduced recently are Des Moines, to 5.9 cents; Mankato, to 9.5 cents; Joliet, to 8.4 cents; Elgin, to 7.5 cents; Hammond, to 7 cents; and Indianapolis, to 8.9 cents, all exclusive of tax.

Chicago an Important Market

While it is argued that a service station reduction of 1 cent in Chicago would not have the effect of refuting the improvement in the tank car markets which have a wider influence, it must not be overlooked that Chicago's population is nearly 4,000,000 and represents an important market in itself. Service station and tank wagon markets in the regular and Ethyl grades continue unchanged. The past downward trends in the tank car markets and the precipitous breaks in the crude oil markets failed to reflect similar depressions in the tank wagon prices, and it is now expected that the upward movement of the tank car gasoline markets will find the tank wagon postings in the regular grades as immobile.

The tank car markets, although up by ta least an eighth of a cent in the lower gravities of gasolines, failed to show improvement in the higher gravities and lower endpoints. Motor fuel composed of a natural gasoline and naphtha blend, is extremely inactive and unchanged in price. The hot weather is blamed for the slack demand for this material. Gasoline and naphtha tank car prices at the close of the week were as follows: 50-52, 450 endpoint naphtha, 2¼ cents to 2½ cents; 58-60, 437 endpoint gasoline, 2¼ cents to 2½ cents; 60-62, 400 endpoint gasoline, 2½ cents to 2⅞ cents; 64-66, 375 endpoint gasoline, 2¾ cents to 3 cents; 64-66, 437 endpoint blended gasoline, 2⅛ cents to 2¼ cents, and 68-70, 360 endpoint gasoline, 3 cents to 3¼ cents. The comparatively high price of blending naphtha is another factor against blended gasoline. Natural gasoline markets were: Grade A, 72-79.9, 375 endpoint and 95 per cent recovery, 1⅞ cents to 2 cents; Grade AA, 80-87.9, 375 endpoint and 95 per cent recovery, 1½ cents to 1⅝ cents; Grade BB, 84-92, 375 endpoint and 85 per cent recovery, 1½ cents. In the Grade AA, propane free material brings the 1⅝-cent price.

Using Benzol

The quality for which jobbers continue to pay a premium is that of good anti-knock rating. Part of the popularity which East Texas gasoline has enjoyed in this district is attributed to its somewhat better quality in this respect than the general run of skimming plant output. According to reports of marketers handling the material in this district the entire output of cracking units in Texas, Oklahoma, Louisiana and Arkansas is sold promptly and a number of the plants will not be able to fill all of the orders received. Several marketers in Chicago have turned to benzol to bring up the octane number of their premium grades. This is significant in view of the fact that benzol sells for 11 cents a gallon in tank car lots. However, it is indicated that a large part of the benzol produced in Chicago is shipped into Ohio where an unprecedented amount of attention is being given to the octane number of gasolines.

Refiners and marketers are convinced that Governor Emmerson will sign Carlson Bill No. 598, which provides that gasoline distributors must furnish bonds of $5,000. One of the larger distributors looks upon the law as a long step towards "weeding out" dishonest marketers. "In the past," this distributor said, "a distributor has been able to set up a business and pay magnificent salaries to himself and his associates while stalling off the gasoline tax collection. Then when it appeared inevitable that the State would demand payment of the tax, the distributor would decare his business insolvent and step out of trouble through the door of bankruptcy. If this distributor posts a $5,000 bond you can be sure that at the first indication that the distributor is lax in the matter of taxes the bonding company will take matters in hand to see what's wrong."

More Hopeful About East Texas

The East Texas crude oil production situation is still occupying the center of the stage, however, although the pressure from the East Texas gasoline influx is said to be considerably relieved. It is widely reported here that the decreased movement of this gasoline into the territory is accounted for by an increased movement toward the Gulf Coast for export to foreign markets or for East Coast distribution. The conviction has grown here that East Texas producers have "seen the light" and are in a better frame of mind for considering the merits of curtailment. That this view is not universal is shown by the fact that new refineries to process this crude continue to be projected. There is a good deal of speculation concerning the decision of Magnolia and Sinclair to post flat prices of 20 cents a barrel in East Texas.

While gasoline markets are on an upward movement and lubricating oils are increasingly active, the other refined products markets were lower in price and practically lifeless.

Kerosene is in the dullest season it has known for many years, due principally to the low gasoline prices. One marketer said that he has forgotten what kerosene is used for since refiners have quit using it to cut their distillates, now that the distillates are in a position analogous to crude oil. Some of the material is moving to poultry farms to play its part in hatching chickens, and for other uses where gasoline cannot be substituted. Tank car prices at the close of last week were: 41-43 water white kerosene, 2 cents to 2⅛ cents; 42-44 water white kerosene, 2⅛ cents to 2¼ cents. A good prime white distillate is selling for as low as 1½ cents.

Lubricating Oils

Although no change in prices of bright stocks and neutrals to compounders is noted, the demand for these products has moved up greatly in the last few weeks. On the finished lubricating oils the price tendency is downward under the pressure of cut prices by mercantile houses which carry the oils as a side line. Branded products such as Is-O-Vis, Veedol, Mobiloil, etc., are being sold in Chicago department stores at about half the price posted at the filling stations. At a number of the filling stations, where gasoline prices are normal, the operator offers the motorist a quart of lubricating oil free with every 5 gallons of gasoline bought. Trackage stations offer lubricating oils at prices ranging from 15

(Continued on Page 114)

41 PRESCOTT PLUNGER PUMPS on the GREAT LAKES PIPE LINE

— the largest high pressure gasoline pipe line in the world

Typical of Great Lakes stations is the No. 1 Barnsdall, shown above, at Barnsdall, Oklahoma, containing two 5¾" x 24" Prescott duplex plunger pumps; each pump has a daily capacity of 14,400 barrels.

PRESCOTT PUMPS ARE BUILT FOR EITHER OIL OR GASOLINE—ANY CAPACITY—ANY PRESSURE—ANY TYPE OF DRIVE.

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THE PRESCOTT COMPANY
MENOMINEE, MICHIGAN, U. S. A.

PRESCOTT PUMPS PREDOMINATE

OGJ 7-2 Gray

ROCKY MOUNTAIN AREA

(Continued from Page 44)

4w, is drilling ahead after landing casing at 900 feet.

Teton County

California Co.'s No. 1 Sullivan, NW NE NW, Section 34-27-7w, Bynum district, pulled 15½-inch and is straight-reaming to 490 feet. Trans-American Oil Co.'s No. 1 Lackey, SE NE NW, Section 28-24-8w, Teton district, is drilling a validating hole. It starts in the Ellis and will be carried to the Ellis-Madison contact. Earl Oil Corp., Ltd.'s No. 1 Gad, SE cor. NE, Section 22-22-8w, Sun River, is drilling at 2,750 feet in the Colorado shale.

Runs From the Fields

Average daily pipe line runs in week ending June 27:

WYOMING	
Salt Creek	34,300
Big Muddy	1,840
Byron	10
Dallas-Derby	650
Dutton Creek	110
Elk Basin	520
Ferris	30
Frannie	500
Grass Creek	2,060
Hudson	420
LaBarge	1,610
Lance Creek	180
Lost Soldier	3,090
Lovel	.....
Oregon Basin	1,440
Osage	1,290
Rock River	1,920
Poison Spider	170
Simpson Ridge	.....
South Casper	.....
Teapot	20
Warm Springs	.....
Total Wyoming	40,160
MONTANA	
Buckley-Border	700
Cat Creek	1,010
Dry Creek	460
Kevin-Sunburst	4,420
Lake Basin	50
Pondera	1,000
Total Montana	7,640
COLORADO	
Florence	430
Fort Collins	1,010
Iles	1,510
Moffat	900
Orchard	350
Rangely	22
Tow Creek	320
Walden	90
Total Colorado	4,632
NEW MEXICO	
Rattlesnake	1,000
Hogback	520
Table Mesa	75
Artesia	986
Cap Rock	192
Getty	200
Hobbs	37,815
Jal	1,146
Lea City	2,464
Eunice	427
Total New Mexico	44,325
Total Rocky Mountain area	97,257
Total previous week	98,370
Difference	1,113

LA.-ARK. FIELDS

(Continued from Page 32)

Smackover Field, Union County, Arkansas, No. 9-A G. P. Hayes, Section 4-16-15, was a disappointment, encountering salt water at 4,025 feet. Five feet of sand, showing oil had been cored at 4,004 feet, but cores from 4,017-25 feet showed some oil with salt water in excess. The operators will rathole ahead until the formation changes at which time another core will be taken. This test is being watched with much interest, for if successful, it will open up another producing horizon in this field, hitherto undeveloped.

LA SALLE IN RECEIVERSHIP

W. J. Schnur of Tulsa was appointed receiver of the LaSalle Petroleum Corp. last week by Judge Owen Owen of the Oklahoma District Court. Mr. Schnur has served as vice president and general manager of the corporation for several years. The receivership was granted on application of the Missouri Savings Bank & Trust Co. of Kansas City which holds mortgage claims totaling $449,000 against the company.

The principal assets of the company consist of a refinery and natural gasoline plant at Burkburnett, Tex. The plants were built in 1919 by the Noble Oil & Gas Co. which was later reorganized under the name of the LaSalle Petroleum Corp. The refinery has skimming equipment and a cracking plant of the Jenkins type which is operated by an affiliated company. Earlier in the month, a state receiver for the LaSalle properties was appointed in Texas.

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 30)

EL PASO COUNTY

Tri-State Oil Co.'s No. 1 Bobadella, 1,325 ft. from S and E lines Sur. 254, S.F. No. 7,247 ..... Show gas 795 ft.; drlg. 1,015 ft.

FISHER COUNTY

Stanolind Oil & Gas Co.'s No. 2 Steele, 1,200 ft. E and 330 ft. N of SW cor. Sec. 210, B.B.B.&C. Sur. ..... Top lime 1,600 ft.; good show oil 3,188-90 ft.; to drill in.

The Texas Company's No. 1 Jean, 330 ft. from E and 400 ft. S of Sec. 201, Blk. 1, B.B.B.&C. Sur. ..... Total depth 2,881 ft.; running 6⅝-in. casing.

GAINES COUNTY

Landreth Prod. Co.'s No. 1 Alley, 660 ft. from N and W of Sec. 2, Blk. A-30, P.S.L. Sur. ..... Rainbow show oil 2,965-75 and 3,030-45 ft.; 100,000 ft. gas at 4,306 ft.; shut down 4,312 ft. to run casing.

Texas Consolidated Oil Co. et al's No. 1 Jones, 2,310 ft. from NE Sec. 4, Blk. A-8, P.S.L. Sur. ..... Shut down 4,750 ft.

GARZA COUNTY

Pandem Oil Corp.'s No. 1 Justice, 330 ft. from S and W of Sec. 12, Blk. 4, H.&G.N. Sur. ..... Spudded and shut down.

Penny & Posey's No. 1 Justice, 1,980 ft. from S and 1,650 ft. from E of Sec. 25, Blk. 6, H.&G.N. Sur. (3,500-ft. cable tool test) ..... Shut down 3,142 ft.

HOWARD COUNTY

Green O. & R. Co.'s No. 1 Denman, 990 ft. from S and 2,310 ft. from W Sec. 14, Blk. 20, Twp. 1s, T.&P. Sur... Spudded and shut down.

HUDSPETH COUNTY

Henshaw's No. 1 Love, C NE Sec. 9, Blk. 67½, P.S.L. Sur. ..... Drlg. 550 ft.

Patillo & Welch's No. 1 Briggs, 300 ft. from S and W Sec. 13, Blk. 73, Twp. 7, T.&P. Sur. ..... Shut down 690 ft.

Theison's No. 1 University, 3,050 ft. from S and 2,225 ft. from E of Sec. 17, Blk. E ..... Spudded 35 ft. and shut down.

IRION COUNTY

Davis et al's No. 1 Suggs, 1,560 ft. from S and 925 ft. from W Sec. 3,051, Blk. 29, H.&T.C. Sur. ..... Shut down 1,475 ft.

Denny & Andrews' No. 1-A Tankersley, 200 ft. from S and 2,000 ft. from E of Sec. 709, J. P. Imhoff Sur. .. Rigged up.

Ellis et al's No. 1 Nutt, 1,350 ft. from N and 450 ft. from E of Sec. 694, Kreikenbohm Sur. ..... Location.

Stanolind Oil & Gas Co.'s No. 1 Williams, 1,320 ft. from S and E of Sec. 1,196, T.T.R.R. Sur. ..... 300 ft. oil in hole from 4,155-63 ft.; fishing baller 5,950 ft.

Fox's No. 1 Horney, 1,520 ft. from N and 1,525 ft. from W Sec. 2, Blk. 3, H.&T.C. Sur. ..... Shut down 1,503 ft.

Straughn & Texannati Oil Co.'s No. 1 Tankersley, 150 ft. from S and 750 ft. from W of Sec. 4, Gonzales County School Land ..... Plugged back to 1,233 ft.; total depth 1,506 ft.

Straughn & Adkins Bros.' No. 1 Lee, 1,080 ft. from W and 420 ft. from N of Sec. 729, C. Kaiser Sur. ..... Rigged up.

JONES COUNTY

Abers et al's No. 1 Burton, 150 ft. from S and 175 ft. from E of 42.4-acre tract in G. Martinez Sur. ..... Shut down 1,140 ft.

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Barney & Duffy's No. 2 King, 3,700 ft. from N and 200 ft. from E, Subd. No. 18, M. Bueno Sur. ..... Rigged up.
Union Oil Co.'s No. 2 King, 4,100 ft. from N and 200 ft. from E, Subd. 18, Bueno Sur. ..... Total depth 1,963 ft.; running 6⅝-in. casing.

LOVING COUNTY

Adams et al's No. 1 Wichmann, 330 ft. from NE and 2,310 ft. from SE of Sec. 84, Blk. 1, W.&N.W. Sur.... Drlg. 2,457 ft.
Ervin & Mahres' No. 1 Thrope, 2,310 ft. from E and 330 ft. from S Sec. 46, Blk. 53, T.&P. Sur. ..... Shut down 810 ft.
Ervin & Mahres' No. 1 Meyer, 990 ft. NE and 330 ft. SE of Sec. 3, Blk. 2, W.&N.W. Sur. ..... Location.
Eppenauer et al's No. 1 Johnson, 330 ft. from NW and SW of Sec. 86, Blk. 1, W.&N.W. Sur. ..... Location.
Falbre & Evans' No. 1 Dean, 330 ft. from NE and 990 ft. from NW Sec. 79, Blk. 33, H.&T.C. Sur. ..... Drlg. 1,890 ft.
Hoffman et al's No. 2 Ramsey et al, 2,310 ft. from NE and 330 ft. from SE Sec. 88 ..... Drlg. 4,096 ft.
Lockhart & Co.'s No. 2 Bowen & Wells, 330 ft. from NE and SE of Sec. 92, Blk. 1, W.&N.W. Sur. ..... Shut down 4,050 ft.
Martin et al's No. 2 Ramsey, 990 ft. from SE and 2,310 ft. from SW Sec. 83, Blk. 1, W.&N.W. Sur. ..... Drlg. 2,020 ft.
Richmond Drlg. Co.'s No. 1 Russell, 990 ft. from NE and 330 ft. from NW Sec. 30, Blk. 31, W.&N.W. Sur.. Cleaning out after 150-qt. shot 4,324-64 ft.; total depth 4,264 ft.; flowed 42 bbls. first 14 hours.
Rush et al's No. 1 Wheat, 330 ft. from NW and SW Sec. 77, Blk. 1, W.&N.W. Sur. ..... Cellar.
Siegel Drlg. Co.'s No. 1 Cartwright et al, 2,310 ft. from S and 990 ft. from W Sec. 1, Blk. 57, Twp. 1, T.&P. Sur. ..... Total depth 2,182 ft.; top pay 2,175-80 ft.; testing water shut-off.
W. A. Suddreth et al's No. 1 Capitola Pool, 2,970 ft. from NE and 990 ft. from NW Sec. 73, Blk. 33, H.&T.C. Sur. ..... Elev. 2,644 ft.; drlg. 652 ft.
Tennant et al's No. 1 Martin, 990 ft. from NW and SW Sec. 66, Blk. 1, W.&N.W. Sur. ..... Shut down 1,400 ft.
California Co.'s No. 3 Allen, 2,191 ft. from NW and 2,182 ft. from SW Sec. 90, Blk. 1, W.&N.W. Sur. ..... Cleaning out 160-qt. shot 4,329-4,275 ft.; flowed 389 bbls. first 24 hours after shot; total depth 4,331 ft.

MENARD COUNTY

Priest's No. 1 Sorrell, 1,000 ft. from E and 200 ft. from S cor. Sec. 132, E.L.R.R. Sur. ..... Shut down 2,860 ft.

PECOS COUNTY

Dittman's No. 1 Sanford, 330 ft. from NW and 1,650 ft. from NE of Sec. 58, Blk. 10, H.&G.N. Sur. ..... Location.
Honolulu Oil Co.'s No. 1 Webb, 3,140 ft. from N and 1,000 ft. from W of Sec. 105, Blk. OW, G.C.&S.F. Sur... Total depth 1,713 ft.; drlg. 2,122 ft.
J. R. Miller et al's No. 1 Bennett, 359 ft. W of CWL, Sec. 1, Blk. 149, G.C.&S.F. Sur. ..... Shut down 2,383 ft. for casing.
Perren Oil Co.'s No. 2 Eaton, S of E Sec. 27, Blk. 3, H.&T.C. Sur. ..... Fishing 1,765 ft.
Pure Oil Co.'s No. 1 Harrison, 2,310 ft. from N and 330 ft. from W of Sec. 208, Blk. 3, T.&P. Sur. ..... Shut down 5,000 ft.
Whitaker et al's No. 1 Mary Devlin, 150 ft. from N and 150 ft. from E Sec. 69, F. Hernandez Sur. ..... Shut down 430 ft.

REEVES COUNTY

R. T. Hansford's No. 1 Williams, 150 ft. from S and W Sec. 17, Blk. 6, H.&G.N. Sur. ..... Shut down 530 ft.
Humble Oil & Ref. Co.'s No. 1 Bolmorhea Livestock Co., 1,320 ft. from N and 1,320 ft. from W Sec. 33, Blk. 5, H.&G.N. Sur. ..... Drlg. 1,925 ft.
Lee O. White et al's No. 1 Hershersor, 330 ft. from N and W lines of Sec. 5, Blk. 51, Twp. 10, T.&P. Sur.... Fishing bit 4,730 ft.

RUNNELS COUNTY

Dutton et al's No. 1 Dean, 5,475 ft. from NE and 1,045 ft. from NW in J. Heil Sur. No. 519 ..... Shut down 2,335 ft.; fishing tools at 2,180 ft.

SCHLEICHER COUNTY

Eastland Oil Co.'s No. 1 Joe Tisdale, C Sec. 29, Blk. M, G.H.&S.A. Sur. ..... Fishing pipe 2,522 ft.
Wesner et al's No. 1 Nicks, 2,310 ft. from N and 2,362 ft. from E of Sec. 77, Blk. LL, T.C. Sur. ..... Top pay 4,000 ft.; shut down 4,006 ft.; approximately 1,000 ft. fluid in hole.
George Wilson's No. 1 Page, Sec. 40, Blk. L, 1,320 ft. from N, 1,570 ft. from W, G.H.&S.A. Sur. ..... Shut down 5,053 ft.

SCURRY COUNTY

G. E. Dickman and R. B. Pender et al's No. 1 F. C. Davis, 1,000 ft. N and 1,770 ft. W of SE cor. of Sec. 275, Blk. 2, H.&T.C. Sur. ..... Shut down 5,100 ft.
Scurry County Oil Exchange's No. 1 Earnest, 2,310 ft. from N and W Sec. 68, Blk. 3, H.&G.N. Sur. ..... Spudded and shut down.
Seifert & Dibble's No. 1 T. M. Blackburn, 2,310 ft. from N and 2,310 ft. from W line of Sec. 153, Blk. 97, H.&T.C. Sur. ..... Shut down 2,390 ft.
Simon & Brock et al's No. 1 Cruse, 2,310 ft. from S and E Sec. 119, Blk. 97, H.&T.C. Sur. ..... Drlg. 1,560 ft.

TERRELL COUNTY

Big Bend Oil Co.'s No. 1 Bassett, C NW Sec. 156, Blk. D, M.-K.-T. Sur. ..... Shut down 2,669 ft.
Keck Pecos Trust Co.'s No. 1 Hamilton, C Sec. 6, Georgetown Ry. Sur. ..... Shut down 2,150 ft.
Miller Bros.' No. 1 Allison & Burke, C NW cor. Sec. 10, Blk. 176, T.&P. Sur. ..... Shut down 120 ft.
Mid-Kansas Oil & Gas Co.'s No. 1 Goode, 2,152 ft. from E and 330 ft. from S Sec. 26, Blk. 141, G.C.&S.F. Sur... Shut down 6,120 ft.
Jones et al's No. 1 Pankeham, C SE NW Sec. 43, Blk. B-2, C.C.S.D.&R.G.N.G. Sur. ..... Top lime 1,690 ft.; drlg. 2,240 ft.

TOM GREEN COUNTY

Belding & Dutton's No. 1 Norsworthy, 2,640 ft. from S and 587 ft. from E of John McNeese Sur. ..... Shut down 760 ft.; show oil and gas 725 ft.
Mintex Oil Co.'s No. 1 Campbell Est., 445 ft. from S and 630 ft. from W of Sec. 180, Dist. No. 11, S.P. Sur..... Shut down 1,994 ft.
Pratt & Hancock's No. 2 Lewis, 100 ft. N and 330 ft. E of most northerly SW cor. of Joshua S. Grant Sur. No. 2 ..... Shut down 200 ft.

UPTON COUNTY

Mintex Oil Co.'s No. 1 Lane, 2,310 ft. from N and 1,650 ft. from W Sec. 36, Blk. 1, M.-K.-T. Sur. ..... Shut down 2,134 ft.
Rankin et al's No. 1 Cordova Union Land, 660 ft. from N and E Sec. 6, G.C.&S.F. Sur., 1¼ miles S of Rankin ..... Drlg. 517 ft.; elev. 2,615 ft.

VAL VERDE COUNTY

Independent Operators' No. 1 Whitehead, SE SE Sec. 10, Blk. 4, I.&G.N. Sur., elev. 1,175 ft. ..... Shut down 5,420 ft.
O. O. Owens' No. 1 Mills, Sec. 128, Blk. 1, I.&G.N. Sur., elev. 2,130 ft. ..... Shut down 6,780 ft.

WARD COUNTY

Bradford et al's No. 1 Carson, 990 ft. from NE and SE Sec. 26, Blk. 5, H.&T.C. Sur. ..... Spraying 10 bbls. oil per day from 2,142 ft.; shut down 2,195 ft.
Bradford & Abell's No. 2 Boogher, 1,180 ft. from NW and 800 ft. from SW Sec. 11, Blk. 5, H.&T.C. Sur.... Drlg. 762 ft.
Bradford's No. 1 York, 330 ft. from NE and SE of Sec. 10, Blk. 34, H.&T.C. Sur. ..... Drlg. 708 ft.
Beckley et al's No. 1 Johnson, 4,140 ft. from NE and 990 ft from SE Sec. 8, Blk. 33, H.&T.C. Sur. ..... Show gas 2,180 ft.; increase 2,197 ft.; shut down 2,240 ft.
Buster Black's No. 1 Hall & Roberts, 990 ft. from NE and 1,650 ft. from NW Sec. 17, Blk. 33, H.&T.C. Sur... Underreaming 6⅝-in. casing at 1,685 ft.
Central Oil & Gas Co.'s No. 1 Barrow, 330 ft. from NW and 1,263 ft. from SW Sec. 55, J. W. Jackson Sur. ..... Drlg. 555 ft.
Gibson & Johnson's No. 1 Johnson, 4,140 ft. from SE and 990 ft. from NE Sec. 10, Blk. 33, H.&T.C. Sur.... Shut down 2,502 ft.
Gulf Prod. Co.'s No. 8 Hutchins, 2,310 ft. from S and 990 ft. from W of Sec. 3, Blk. F, G.M.M.B&A. Sur. .. Shut down 1,310 ft.
Hankinson et al's No. 1 Emery, 3,090 ft. from SE and 510 ft. from SW. Sec. 26, Blk. 5, H.&T.C. Sur. ..... Top salt 340 ft.; shut down 1,672 ft.
Moran & Miles' No. 1 Boogher, 3,603 ft. from NE and 1,303 ft. from SE Sec. 11, Blk. 5, H.&T.C. Sur. ..... Shut down 215 ft.
O'Quinn et al's No. 1 Cummins, 4,300 ft. from NE and 330 ft. from SE of Sec. 11, Blk. 5, H.&T.C. Sur. ..... Running 8¼-in. casing at 800 ft.
Pat Moran's No. 1 Sweatt, 1,470 ft. from SW and 150 ft. from NW Sec. 12, Blk. 5, H.&T.C. Sur. ..... Top pay 2,169 ft.; cleaning out at 2,170 ft.; gauged 35 bbls. in 12 hours.
Rector Oil Co.'s No. 1 Smith, 1,320 ft. from N and E. Sec. 22, Blk. A, G.M.M.B.&A. Sur. ..... Top salt 940 ft.; shut down 2,060 ft.
Shipley et al's No. 5 Hayslett, 2,490 ft. from SE and 1,980 ft. from SW Sec. 17, Bl. 5, H.&T.C. Sur. ..... Shut down 2,520 ft.; 1,500 ft. oil in hole; waiting on tubing.
Simms Oil Co.'s No. 1 Himmel, 330 ft. from NE and 2,310 ft. from SE Sec. 30, Blk. B-29, P.S.L. Sur. ..... Top pay 2,246 ft. and 2,325 ft.; drlg. 2,595 ft.
Sturm's No. 1 Jones, 330 ft. from SW and SE of Sec. 25, Blk. B-29, P.S.L. Sur. ..... Elev. 2,519 ft.; shut down 2,475 ft.; flowing 120 bbls. daily.
Shipley et al's No. 1 Monroe, 330 ft. SE SW Sec. 3, Blk. 1 ..... Drlg. by tools 4,355 ft.
White et al's No. 1 Burtner, 150 ft. from NE and 515 ft. from SE of Sec. 8, Blk. 32, H.&T.C. Sur. ..... Rigging up.

WINKLER COUNTY

Liner Drlg. Co.'s No. 1 Campbell, 350 ft. from N and E cor. Sec. 2, Blk. B-5 ..... Shut down 4,640 ft.

EAST CENTRAL TEXAS WILDCATS

(Continued from Page 28)

DALLAS COUNTY

Paris' No. 1 Wilkinson, 2,787 ft. from NW and 3,241 ft. from SW of John P. Anderson Sur. ..... T. D. 870 ft.; shut down.

DELTA COUNTY

Delta Development Co.'s No. 2 Mallie Ablowich, 300 ft. S of No. 1 Cooper, Townsite Sur. ..... Shut down 3,128 ft.
D. S. Hood's No. 1 J. J. Balser, 185 ft. from S and 580 ft. W of Balser 40-ac. tract in SE cor. T. B. Laddin Sur. ..... Derrick blew down.

ELLIS COUNTY

E. M. Roger's No. 1 John Lee Winn, 1,650 ft. from E and 510 ft. from S of Orland ..... Shut down 1,360 ft.; drill stem in hole.

FRANKLIN COUNTY

George L. Pace and L. B. Pruitt's No. 1 C. E. Cowan, 150 ft. out of NE cor. of 92-ac. tract and survey, Lipscomb Sur. ..... Drlg. 3,115 ft.

FREESTONE COUNTY

Raley and Clark's No. 1 McLancaster (Pampier), 150 ft. from E of W line and center of N and S line, B. Avant Sur. ..... Moving in rig.
E. L. Smith's No. 1 Emily Jackson, center of N 150 acres of 300-ac. Emily Jackson tract ..... Fishing for drill stem 3,136 ft.

GREGG COUNTY

Abernathy et al's No. 1 L. A. Rodden, 630 ft. from N and 320 ft. from E lines of Martha Dillard Sur. ..... Derrick.
Alco Royalty Co.'s No. 1 A. N. King, 553 ft. from E and 165 ft. from S lines of 24-ac. tract in G. A. Thomason Sur. ..... Oil sand 3,570-72 ft.; set csg. 3,567 ft.
Amerada Petroleum Corp.'s No. 1 W. E. and Catie N. Bumpas, 250 ft. from S and E lines of 100-ac. tract in W. H. Castleberry Sur. ..... Drlg. 2,892 ft.; top Pecan Gap 2,448 ft.
O. O. Alford et al's No. 1 L. M. Calhurn, 208 ft. from S N and 392 ft. from E of 39.7-ac. tract, Henry Hobson Sur. ..... Drlg. 1,900 ft.
Arkansas Drlg. Co.'s No. 1 S. Dodson, 150 ft. from E an 1 150 ft. from S of lease and survey, Allen Norris Sur. ..... Drlg. 3,005 ft.; top Pecan Gap 2,555 ft.
Arkansas Fuel Oil Co.'s No. 1 J. H. and Jim Whitaker, 330 ft. from S and W lines of 106-ac. tract in C. H. Alexander Sur. ..... Location.
Atlantic Prod. Co.'s No. 1 J. J. Fuller, 394 ft. from E and 343 ft. from S of 50-ac. tract and lease, Mowmery Irwin Sur. ..... Derrick.
Armstrong and Pitts' No. 1 Walker, 940 ft. from N and 1,970 ft. from E of survey, Martha Dillard Sur. ..... Derrick.
P. P. Ash et al's No. 1 A. H. Tubbs, 1,550 ft. from S and 4,120 ft. from E of survey, Dolores Sanches Sur. ..... Derrick.
Badgett and Ward's No. 1 Sample, 655 ft. S and 185 ft. W of SW cor. of A. Z. Jeffery 29.5 acres, W. P. Chisum Sur. ..... Shut down 1,300 ft. for drill pipe.
Becker et al's No. 1 J. C. Barrett, 330 ft. from S and W lines of N 100 acres of 320-ac. tract in G. W. Mooper Sur. ..... Drlg. 1,725 ft.
Barnsdall Oil Co.'s No. 1 Ladd Smith, 300 ft. from N and 150 ft. from W line of survey, J. S. Carrithers Sur. ..... Location.
Barnsdall Oil Co.'s No. 1 G. E. Adams, 1,150 ft. from S and 3,720 ft. from W of G. W. Hooper Sur. ..... Location.
Bob et al's No. 1 T. L. Broy, 290 ft. from E and 1,640 ft. from S of H. A. Hoidt Sur. ..... Location.
Byrd-Frost, Inc.'s No. 1 J. R. Watson, center of 5-ac. lease, 1,500 ft. from E and 2,250 ft. from S lines of survey, J. S. Carrithers Sur. ..... Drlg. 2,876 ft.
M. T. Beeler's No. 1 Finley and Thomas, 150 ft. from N and 150 ft. from W of 10-ac. lease, C. H. Alexander Sur. ..... Building derrick.
Branson et al's No. 1 J. J. Fuller, 1,050 ft. from N and 170 ft. from W of survey, M. Alexander Sur. .... Derrick.
C. A. Bryan's No. 1 C. Vernon, 1,340 ft. from E and 151 ft. N of SW cor. of C. Vernon 58.75-ac. tract, W. W. Avery Sur. ..... Derrick.
Bell & Graddy's No. 1 M. George (or Daniels), 325 ft. S and 650 ft. W of 26-ac. tract, Mary Van Winkle Sur. ..... On fire; T. D. 2,580 ft.
B. L. Brooklin's No. 1 J. M. Tuttle, 150 ft. from N and 295 ft. from E of 12½-ac. lease, William H. Castleberry Sur. ..... Drlg. 2,582 ft.
Callahan, Thompson et al's No. 1 Fenn, 463 ft. from N and 150 ft. from E, 778 ft. from S of 44.5-ac. tract, David Ferguson Sur. ..... Oil sand 3,603-40 ft.; preparing to test.
Callahan et al's No. 2 Mollie Fenn, 450 ft. from S and 150 ft. from W lines of 44-ac. tract in D. Ferguson Sur. ..... Derrick.
Columbia Oil & &Gas Co.'s No. 1-A Harley, 650 ft. E and 300 ft. S of SE cor. of Laura Walker 45-ac. tract, William Robinson Sur. ..... Moving in rig.

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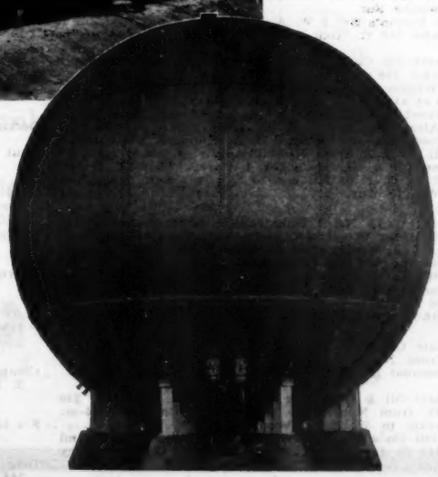

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Continental Oil Co.'s No. 1 J. J. Flewellen, 359 ft. from N and 949 ft. from E of 200-ac. lease, Marshall Mann Sur. ..... Location.

Davis and Russell's No. 1 M. E. Anderson, 150 ft. from E and 75 ft. from S of 3-ac. lease in Kilgore Townsite, Mary Van Winkle Sur. ..... Shut down 3,558 ft.

Charles Davidson et al's No. 1 Paul Jones, 7,000 ft. from most southerly N line and 3,600 ft. from W, W. P. Chisum Sur. ..... Reaming; T. D. 3,664 ft.

Duffey-Davis and McGrede's No. 1, 1,310 ft. from N and 3,160 ft. from E of survey, Martha Dillard Sur. ..... Rig up.

Eastland Oil & Gas Co.'s No. 1 B. B. Sparks, 150 ft. from N and 150 ft. from W of E 50 acres of 100-ac. tract, Harvey R. Kirk Sur. ..... Derrick.

Empire Oil & Refining Co.'s No. 1 Otto Lockhart, 150 ft. from E and 150 ft. from S of 75-ac. lease, F. W. Warraner Sur. ..... Top sand 3,521 ft.; set 6⅝-in. csg.; drlg. plug.

Dr. J. C. Falvey et al's No. 1 fee, 150 ft. from S and 150 ft. from W of 58-ac. tract, Marshall Mann Sur. ..... T. D. 990 ft.; comp. as water well, will skid rig.

Greer's No. 1 L. M. Colburn, 150 ft. from E and 150 ft. from S of 45-ac. lease, 5,700 ft. from E and 850 ft. from N of survey, Henry Hathaway Sur. ..... Rig up.

Gulf Production Co.'s No. 1 M. T. Cole, 893 varas S and 107 varas E of NE cor. Brooks Sur., but in T. Meador Sur. ..... Set 166 ft. of 10-in. csg.

Gulf Production Co.'s No. 1 Willie Holt, 150 ft. from N and 1,700 ft. from E lines of John Blair Sur. ..... Rig up.

Harper Petroleum Corp.'s No. 1 Woodley Jones, 2,000 ft. from N line and 3,900 ft. from E line of William H. Castleberry Sur. ..... Derrick.

Gulf Production Co.'s No. 1 T. C. Reeves et al, 175 ft. from S and 525 ft. from W lines of lease in G. F. Penn Sur. ..... Location.

Gulf Prod. Co.'s No. 1 Cole, 893 varas S along E line of Samuel Brooks Sur. from NE cor. of same, thence 107 varas E at right angles, J. Meador Sur. ..... Moving in.

Howard and Russell's No. 1 Stone, 150 ft. from N and 150 ft. from E of 100-ac. tract, Bailey Anderson Sur. ..... Derrick.

Houston Oil Co.'s No. 1 E. W. Clements, 200 ft. from E and 200 ft. from S of 18-ac. tract, George A. Thomason Sur. ..... Oil sand 3,531-88 ft.; running tubing.

Humble Oil & Refining Co.'s No. 1 W. W. Holland, 150 ft. from E and 336 ft. from S lines of 246-ac. tract in M. Mosley Sur. ..... Derrick.

Humble Oil & Refining Co.'s No. 1 H. M. Lawrence, 540 ft. from N and 219 ft. from W of 100-ac. tract, David Ferguson Sur. ..... Moving in material.

Humphrey et al's No. 1 A. Spear, 150 ft. from N and W lines of Spear tract, Mary Van Winkle Sur. ..... Drlg. 3,473 ft.; top Austin chalk 3,390 ft.

Hurbart and Brown's No. 1 L. L. Mackey, 990 ft. from E and 990 ft. from S of 269-ac. tract, 1,000 ft. from W and 999 ft. from S of survey, G. Y. Chambers Sur. ..... Top Austin chalk 3,583 ft.; coring 3,610-25 ft.

K. B. Oil Co.'s No. 1 Dickson, 150 ft. from S and 150 ft. from W of 6-ac. lease, Mary Van Winkle Sur. ..... Derrick.

W. R. Jones et al's No. 1 Dovie C. Satterwhite, 200 ft. from S and 180 ft. from W of 13½-ac. tract, Mowry Irwin Sur. ..... Shut down 2,109 ft.

Kimsey-Trimble's No. 1 Griffith Davis, 933 ft. E of N line of Griffith Davis 119.5-ac. tract from NW cor. of same and 145 ft. S at right angles, W. P. Chisum Sur. ..... Shut down 3,100 ft.

Charles Love et al's No. 1 J. B. Doby, 150 ft. from E and 150 ft. from S of S 6 acres of W 42 acres of 170-ac. tract, W. H. Castleberry Sur. ..... Derrick.

Lion Oil & Refining Co.'s No. 1 C. D. Evans, 254 ft. from N and 254 ft. from S, 250 ft. from W of 16-ac. lease, Pleasant McAnally Sur. ..... Rig up.

J. K. Livingston Oil Co.'s No. 1 D. C. Johnson, 200 ft. from N and 150 ft. from E of survey, Martha Dillard Sur. ..... Drlg. 350 ft.

Magnolia Petroleum Co.'s No. 1 R. L. Salter, 150 ft. from S and 150 ft. from W of 25-ac. tract, H. Edwards Sur. ..... Oil sand 3,573-75 and 3,583-3,602 ft.; T. D. 3,602 ft.; waiting orders.

Magnolia Petroleum Co.'s No. 1 O. F. Smith (A. Ramsey), 306 ft. from N and 330 ft. from E lines of 61-ac. tract in H. Edwards Sur. ..... Drlg. 2,945 ft.

Mid-Kansas Oil & Gas Co.'s No. 1 James Moore et al, 150 ft. from S and E lines of most southerly SE cor. of 90-ac. lease in J. Mosley Sur. ..... Derrick.

George L. Pace et al's No. 1 W. D. Anderson, 150 ft. from N and 150 ft. from W of 13⅝-ac. tract, G. W. Hooper Sur. ..... Drlg. 2,984 ft.

Pelican Natural Gas Co.'s No. 1 A. Spear and R. H. Laird, 1,650 ft. from N and 147 ft. from E lines of A. Norris Sur. ..... Rig up.

Prince and Prince's No. 1 J. Worr, 630 ft. from W of NW cor. of George Hampton Sur., Haden Edwards Sur. ..... Derrick.

J. O. Perrin's No. 1 W. A. Burknight, 2,035 ft. from E and 350 ft. from S of survey, H. Edwards Sur. ..... Top Austin chalk 3,524 ft.; oil sand 3,578-3,645 ft.

Roberts Oil Co.'s No. 1 W. B. Goyne, 150 ft. from S and 150 ft. from W of 14-ac. tract, Mary Van Winkle Sur. ..... Derrick.

Ross et al's No. 1, located on Findley & Thomas 50-ac. tract, 150 ft. from S line of 6.66-ac. lease, C. H. Alexander Sur. ..... Derrick.

C. Rosenfield et al's No. 1 J. A. Knowles, 700 ft. from E, 1,350 ft. from N, William Lyles Sur. ..... Shut down.

Sabine Oil & Gas Co.'s No. 1 Harris, 3,500 ft. E and 3,500 ft. N of NE cor. of S. Lewis Sur., Mary Van Winkle Sur. ..... Drlg. 3,609 ft. in Georgetown lime.

Scheig et al's No. 1 Rube Smith, 1,100 ft. N and 200 ft. from W of tract and survey, Slaughter Sur. ..... Derrick.

Sneed and Worley's No. 1 Lillie Willis, 300 ft. from E and 400 ft. from S of 13.57-ac. tract, G. W. Hooper Sur. ..... Derrick.

Seigler and McCall's No. 1 Missie Young, 330 ft. from N and 330 ft. from W of tract and survey, Carl Rhodes Sur. ..... T. D. 3,479 ft.; set 6⅝-in. csg. 3,479 ft.

Sinclair Oil & Gas Co.'s No. 1 M. T. Cole, 2,640 ft. from N and 2,742.3 ft. from W line of survey, Samuel Brooks Sur. ..... Cleaned out and on open gauge; T. D. 3,681 ft.

Sinclair Oil & Gas Co.'s No. 1 John R. Williams, 250 ft. from N and 250 ft. from W lines of 36.4-ac. tract in W. L. Wilburn Sur. ..... Set 12½-in. csg. 222 ft.

Sun Oil Co.'s No. 2 G. W. Tate, 250 ft. from N and 360 ft. from W of 64-ac. tract, W. H. Castleberry Sur. ..... Drlg. 3,508 ft.; top Pecan Gap 2,388-2,923 ft.; top Austin 3,464 ft.

Stanolind Oil & Gas Co.'s No. 1 J. E. Wilhite, 330 ft. from N and 150 ft. from W of tract and lease, G. W. Hooper Sur. ..... Oil sand 3,625-75 ft.; run tubing.

Sun Oil Co.'s No. 1 J. T. Loden, 150 ft. from S and 150 ft. from W of 100-ac. tract, Dolores Sanches Sur. ..... Drlg. 2,900 ft.

Sun Oil Co.'s No. 1 Pentecost, 150 ft. from S and 150 ft. from W of lease, Mary Scott Sur. ..... Drlg. 2,922 ft.

Superior Oil Co.'s No. 1 L. C. Ingram, 200 ft. from E and 167 ft. from S of 160-ac. tract in W. E. Postelle Sur. ..... Location.

C. S. Thomas et al's No. 1 C. B. Everett, 300 ft. from N and 200 ft. from E of 30.25-ac. tract, John Ruddle Sur. ..... Oil sand and gravel 3,489-93 ft.; set csg.

The Texas Company's No. 1 J. B. Bales, 330 ft. from S and 150 ft. from W of 30-ac. tract, William Carlton Sur. ..... Oil sand 3,522-26 ft.; set 6⅝-in. csg. 3,482 ft.

L. C. Thorpe's No. 1 J. A. Butts, 4,850 ft. S of N and 5,200 ft. E of W line of survey, Mary Van Winkle Sur. ..... Derrick.

Vacuum Oil Co.'s No. 1 R. S. White, 250 ft. from S and W lines of 82-ac. tract in D. Moore Sur. ..... Drlg. 40 ft.

Valentine Oil Co.'s No. 1 Goyne-Hughey, 6,100 ft. from S and 6,800 ft. from W of survey, Mary Van Winkle Sur. ..... Derrick.

H. M. Wages et al's No. 1 Finley and Thomas, 165 ft. from E and 150 ft. from S of 10-ac. lease, Charles H. Alexander Sur. ..... Shut down 3,200 ft.

Woodley Petroleum Co.'s No. 1 Dyera, 200 ft. from S and 200 ft. from W of 640-ac. lease, H. Hathaway Sur. ..... Derrick.

Ziegler Oil Co.'s No. 1 L. D. Campbell, 540 ft. from N and 219 ft. from E of 72½-ac. tract, David Ferguson Sur. ..... Derrick.

HENDERSON COUNTY

Westside Investment Co.'s No. 1 Thornhill, 450 varas from W and 400 varas from N line of survey, James Spivey heirs Sur. ..... Drlg. 4,173 ft.

HOPKINS COUNTY

Thelma Wells' No. 1 Taylor, 230 ft. from N and W lines of 80-ac. tract in the John Polk Sur. ..... Derrick.

HOUSTON COUNTY

N. G. Irish's No. 1 Mrs. Byrdie Watters, 2,300 ft. W and 300 ft. S from the NE cor. of I. J. Ellis Sur. ..... Location.

Ramsland and Ramsland's No. 1 Pennington, 750 varas W of E line and 500 varas from S line of survey on 186-ac. tract, Ramon La Garza Sur. ..... Derrick.

Phillips and Phillips' No. 1 Kennedy Bros., 485 varas out of SW cor. of 100-ac. tract, Jose M. Procella Sur. ..... Derrick.

LAMAR COUNTY

Doyle & Jondreau's No. 1 Guest, 250 ft. S and 2,046 ft. E of 100-ac. tract, L. Roberts Sur. ..... Shut down 2,705 ft.

Puritan's No. 1 George Parr, 2,000 ft. from W of Frisco Railway and 1,000 ft. from E line of R. Russell Sur. ..... Ready to spud.

LEON COUNTY

Cooper et al's No. 1 Lynch, 4,000 ft. from the W line and 250 ft. N from the S lines of Thomas H. Gardner Sur., and in 200-ac. tract ..... Location.

LIMESTONE COUNTY

George McCamey's No. 1 B. K. Arnett, center of Blk. 13 in Casson Townsite ..... Shut down 1,720 ft.

MORRIS COUNTY

Dumas et al's No. 1 Tom Ball, 1,046 ft. from E and 248 ft. from S of 71-ac. tract, A. S. Young heirs Sur. ..... Derrick.

Harry Elliott et al's No. 1 Clayton B. Brown, 732 ft. from N and 278 ft. E of NE cor., J. S. Slaughter Sur. in the George Gyer Sur. ..... Shut down 3,842 ft.

Shelby Oil Co.'s No. 1 Clayton Brown, located in Willis Coffey Sur. ..... Drlg. 1,882 ft.

NACOGDOCHES COUNTY

Benedum & Trees' No. 1 Conkwright, 150 ft. from N in center of E and W lines of A. H. Conkwright 100-ac. tract, J. A. Cherino Sur. ..... Coring 4,826 ft.

Bunte et al's No. 1 A. F. Beatman, 330 ft. from S and 150 ft. from W of 67-ac. tract, William A. Moore Sur. ..... Shut down 1,695 ft.

Burke et al's No. 1 F. R. Patterson, 6,515 varas from W and 315 varas from W line of Patterson 70-ac. tract, Joseph Las Santos Chay Sur. ..... Shut down 4,270 ft.

Churchill-Armstrong's No. 1 Max W. Hart, 2,640 ft. from N line and 2,640 ft. from S of N line of survey, George Pollett Sur. ..... Derrick.

Foreman and Weller's No. 1 Norris, 60 ft. NW of E line and 420 ft. S of road in 73.5-ac. tract, Hosea Y. Barbo Sur. ..... Shut down.

Foreman et al's No. 1 Robert Mattaner, NW cor. of 520-ac. tract, J. A. Cherino grant ..... Rig up.

Harwell and Scott's No. 1 R. I. Driver, 1,500 ft. from SE cor. of P. B. Ballard 125-ac. tract, 15 miles SE of Nacogdoches in Patricia De Torres Sur. ..... Drlg. 2,252 ft.

Joiner and Henson's No. 1 Andy Legg, 330 ft. from N and 330 ft. from W of tract, John Durat Sur. ..... Shut down 3,925 ft.

Morgan Oil Corp.'s No. 1 R. B. Burr, center of J. L. Reed 20-ac. tract, Jose Lay De La Bega Sur. ..... Drlg. 3,150 ft.

M. A. Vaughn's No. 1 Dixon Greer, in the M. G. Herrera Sur. ..... Derrick.

Paul Vitek et al's No. 1 Hayter estate, 1,000 ft. E of Laco Creek and 300 ft. S of Nacogdoches and Jacksonville Highway De Las Santos-Coy Sur. ..... Shut down 3,000 ft.

W. W. Wheeler's No. 1 I. D. Parmley, about 155 varas N of S line and about center of E line of survey, John Kirby Sur. ..... Shut down 3,780 ft.

Sequin's No. 1 Vanover, 6,972 ft. from N and 6,636 ft. from E of Alford Oliver Sur., E. Boyd E 100-ac. tract ..... Digging pit.

Big Indian Oil Co.'s No. 1 J. N. Stewart, center of 79-ac. tract in the Jose Ignacio Ybarba Sur. ..... Location.

L. E. Trout and Dison's No. 1 E. A. Blount, 150 ft. out of NW cor. of survey and tract, E. D. Williams Sur. ..... Derrick.

RAINS COUNTY

Berry and Hale's No. 1 Ownsby, 150 ft. N and 1,100 ft. from E of most easterly SE cor. of survey, Alexander Sur. ..... Shut down 2,096 ft.

RED RIVER COUNTY

Droppleman and Bundy's No. 1 J. W. Cunningham, 250 ft. from the S and 1,066 ft. from the E lines of B. M. Ballard Sur. ..... Old well being drilled deeper.

J. R. Sarland's No. 1 Bryan, 1,200 ft. SW of NE cor. of Bryan 130 acres, F. Vaughn Sur. ..... Derrick up.

Harris & Joiner's No. 1 E. Howison, 225 ft. S, 185 ft. W of 79-ac. tract, William Humphreys Sur. ..... Putting up new rig.

Pearsons et al's No. 1 J. R. Dellahunty, 500 ft. from N of Isaac Moore Sur. and 200 ft. E of E line of Robert Glass Sur. ..... Putting up new rig.

KILGORE AREA—RUSK COUNTY

Crider and Manley's No. 1 R. A. Motley, 600 ft. from S and 1,150 ft. from W of J. T. McDaniels Sur. ..... Derrick.

E. L. Chapman's No. 1 Jesse Minschew, 528 ft. from E and 1,200 ft. from S of survey, Henry B. Dance Sur. ..... Set 6-in. csg. at 3,763 ft.; top Austin chalk 3,652 ft.

Doctor Thompson's No. 1, 150 ft. from N and 230 ft. from W of lease and survey, Mary Cogswell Sur. ..... Top sand 3,608 ft.; T. D. 3,625 ft.

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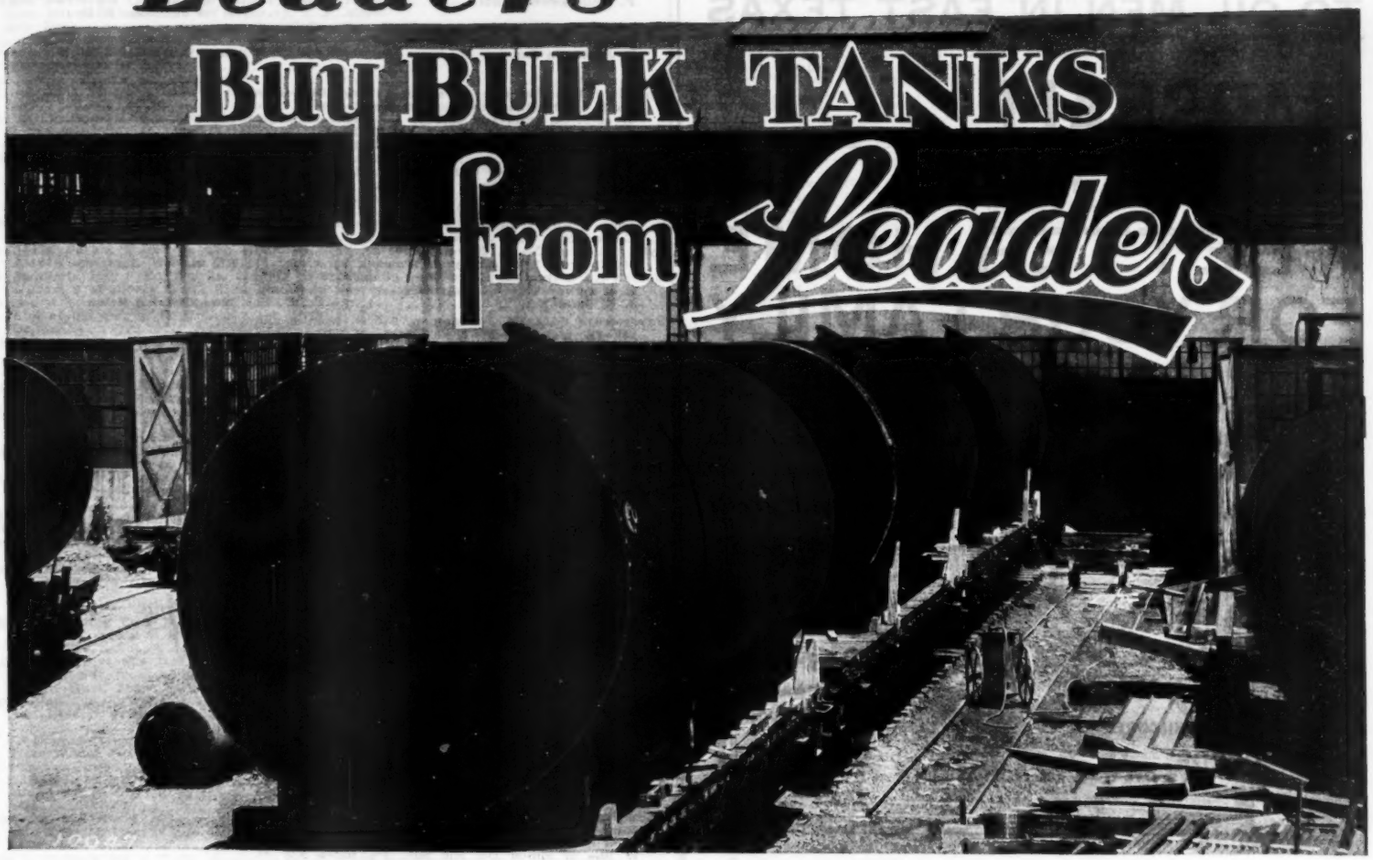

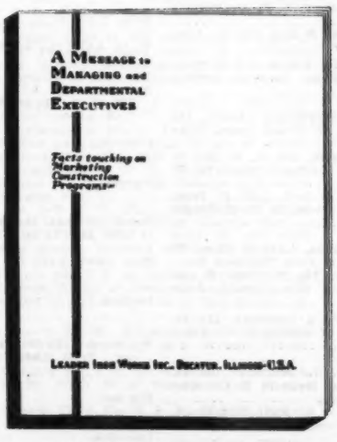
A Message to Managing and Departmental Executives
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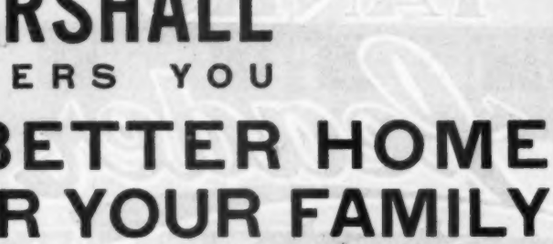

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Marshall

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Gulf Production Co.'s No. 1 M. R. Terrell, 330 ft. S and W of NE cor. Loc. 3 or 2,300 ft. from W and 1,550 ft. from S lines of E. G. Sevier Sur. ..... Rig up.
Harry Elliott's No. 1 Carroll, 175 ft. from N and 200 ft. from E of 7-ac. tract, W. R. Cook Sur. ..... Location.
Humble Oil & Refining Co.'s No. 1 Barksdale, 150 ft. from N and 180 ft. from W of 76.6-ac. tract, S. P. Hollingsworth Sur. ..... Drlg. 3,357 ft.; top Pecan Gap 2,708 ft.; base 3,143 ft.
Humble Oil & Refining Co.'s No. 1 May Day Caldwell, 2,110 ft. from N and 1,180 ft. from W of survey, T. J. Martin Sur. ..... Base Pecan Gap 3,109 ft.; sand 3,731-55 ft.; T. D.; preparing to swab.
Humble Oil & Refining Co.'s No. 1 First Guarantee Bank of Overton, 330 ft. from S and 330 ft. from W of 80-ac. tract and survey. ..... Set 6-in. csg. 3,680 ft.
Humble Oil & Refining Co.'s No. 1 DeGuerin, 450 ft. from N and 300 ft. from E of 131.8-ac. tract, T. J. Martin Sur. ..... Drlg. 3,690 ft.
Humble Oil & Refining Co.'s No. 1 J. R. Box, 330 ft. from S and W lines of 135-ac. tract in T. J. Martin Sur. ..... Set 193 ft. of 12½-in. csg.
Humble Oil & Refining Co.'s No. 1 R. E. Holt, 380 ft. from N and E lines of 91.4-ac. tract in the J. M. Harton Sur. ..... Location.
Lyle and Orr's No. 1 Powers, 3,200 ft. from N and 360 ft. from E of survey, J. Womack Sur. ..... Rig up.
Moser's No. 1 Buntyn, 554 ft. from N and 325 ft. from E of survey, the most northeasterly cor. of survey, J. C. Snow Sur. ..... Spudded; shut down.
Navarro Oil Co.'s No. 1 Hindman, 250 ft. from S and 330 ft. from W of 11-ac. lease, W. W. Simms Sur. ..... Standing rigged up.
J. J. O'Hearn's No. 1 Mary Moore McMillan, 2,110 ft. from N and 600 ft. from W of survey, T. J. Martin Sur. ..... Drlg. 2,890 ft.
Mrs. Joyce Richardson, 150 ft. from N and 150 ft. from W of 10-ac. tract, Robert W. Smith Sur. ..... Derrick.
Shell Petroleum Corp.'s No. 1 W. P. Moore, 1,075 ft. from N and 305 ft. from E lines of H. Wiggins Sur., Abstract 875 ..... Location.
State Production Co.'s No. 1 Gipson, 630 ft. from N and 175 ft. from E lines of tract in T. Lloyd Sur. .. Location.
Stanolind Oil & Gas Co.'s No. 1 O'Quinn, 3,050 ft. from W and 1,900 ft. from S of survey, George Berry Sur. ..... Top Pecan Gap 2,756 ft.; base 3,156 ft.; top Austin chalk 3,608 ft.; T. D. 3,758 ft.; waiting on csg.
Stephens and Turner's No. 1 Doctor Prickett, 150 ft. out of NE cor. tract in T. J. Roberts Sur. ..... Drlg. 2,475 ft.
Stanolind Oil & Gas Co.'s No. 1 Beal, 300 ft. from the S and W lines of the lease, W. P. Chisum Sur. ..... Drlg. 1,169 ft.

JOINER POOL—RUSK COUNTY

T. C. Adams' No. 1 J. E. Arnold, 150 ft. from S and W lines of 26-ac. tract in M. J. Prue Sur. ..... Rig up.
Alford et al's No. 1 W. L. Thrash, 1,103 ft. from N, 430 ft. from E of SE cor., B. Smith Sur. ..... Derrick.
Armstrong and Pitt's No. 1 Cooper, 2,150 ft. from W and 166 ft. from N of survey ..... T. D. 3,520 ft.; fishing.
Armstrong's No. 1 Alford, 151 ft. from S and 1,080 ft. from W of survey, T. J. Moore Sur. ..... Derrick.
Bellinger's No. 1 F. C. Warren, 400 ft. from S of most northerly S line and 900 ft. from E of most easterly E line of survey, W. G. Tuttle Sur. ..... Set 12½-in. csg. 82 ft.
Bullock's No. 1 Alford, 1,300 ft. from S and 150 ft. from W of survey, T. J. Moore Sur. ..... Derrick.
Bridwell's No. 1 Stone, 150 ft. from N and 150 ft. from W of lease and tract, M. J. Prue Sur. ..... Drlg. 3,244 ft.
Campbell Oil Co.'s No. 1 Compton, 600 ft. from N and W line of Simon Del Rio Sur., 1½ miles NW of Minden ..... Derrick.
Cap Rock Oil Co.'s No. 1 Burton, 1,100 ft. E of W line and 520 ft. S of N line in SE cor. of 62½-ac. tract, Juan Jose Yarbo Sur. ..... Moving in rig.
Champline and Bass' No. 1 R. G. Mason, 3,900 ft. from E and 5,600 ft. from S of survey, J. B. De Cadena Sur. ..... Drlg. 2,678 ft.
Comb's No. 1 Fox, 3,150 ft. from S and 150 ft. from E of survey, D. Carmack Sur. ..... T. D. 3,675 ft.; set 6-in. csg.
Droppleman Development Co.'s No. 1 Cox, 384 ft. from N and 330 ft. from W of 20-ac. lease or survey, John Darley Sur. ..... Set 6-in. csg. 3,720 ft.; sand 3,721-42 ft.; T. D. 3,743 ft.
Dan Dillon et al's No. 1 W. H. Frederick (Jake), 150 ft. from E, 150 ft. from S of 50-ac. tract, Juan Ximenes Sur. ..... Derrick.
Dunnigan and Holt's No. 1 Cansler, 150 ft. N and W of SW cor. Gabe McIlroy 16.3-ac. tract in F. Cordova Sur. ..... Derrick.
East Texas Refining Co.'s No. 1 J. Bell, 1,250 ft. from E and 750 ft. from N of survey, S. P. Hollingsworth Sur. ..... Sand 3,771-93 ft.; set 6-in. csg. 3,795 ft.; T. D. 3,793 ft.
Elsy and Tauteaham's No. 1 Deason, 1,300 ft. from W and 3,700 ft. from S of survey, Juan Ximenes Sur. .. Shut down 2,310 ft.
Elsy Drlg. Co.'s No. 1 Frederick, 150 ft. from S and 603 ft. from W of Frederick 90-ac. tract, Juan Ximenes Sur. ..... Derrick.
Empire Oil & Refining Co.'s No. 1 Leverett, 150 ft. from S and 150 ft. from W of survey, J. C. Snow Sur. ..... Top sand 3,670 ft.; running 6⅝-in. csg.; T. D. 3,684 ft.
Gulf Production Co.'s No. 1 W. L. Murphy, 150 ft. from N and W lines of 79-ac. tract in F. Cordova Sur. ..... Rig up.
Humble Oil & Refining Co.'s No. 1 Odell Blackwell, 332 ft. from N and 330 ft. from E lines of 72.5-ac. tract in the F. Cordova Sur. ..... Location.
Humble Oil & Refining Co.'s No. 1 J. E. Glover, 330 ft. N and 330 ft. from the NW cor. of the J. R. Lindsey 45-ac. tract in the Anna Melton Sur. ..... Location.
Humble Oil & Refining Co.'s No. 1 W. L. Price, 1,300 ft. from N and 600 ft. from E lines of Anna Melton Sur. ..... Location.
Humble Oil & Refining Co.'s No. 1 J. W. Turner, 990 ft. from N and 330 ft. from W lines of 104.5-ac. tract in Anna Melton Sur. ..... Set 194 ft. 12½-in. csg.
Humble Oil & Refining Co.'s No. 1 Shaw, 2,850 ft. from W and 5,800 ft. from S of survey, F. Cordova Sur. .... Set 6-in. csg. 3,715 ft.; waiting on csg.
Humble Oil & Refining Co.'s No. 1 Jones-Fuller, 330 ft. from N and 330 ft. from W of 115.66-ac. tract, J. Ellington Sur. ..... Drlg. 3,000 ft.
Humble Oil & Refining Co.'s No. 1 W. A. Mullikin, 4,290 ft. from S and 6,700 ft. from E of survey, T. J. Martin Sur. ..... Base Pecan Gap 3,090 ft.; top Austin 3,537 ft.; base Austin 3,685 ft.; sand 3,685-95 ft.; T. D. 3,685 ft.
Humble Oil & Refining Co.'s No. 1 R. T. Cameron, 3,300 ft. from S and 6,700 ft. from E of survey ..... Coring 3,682 ft.; sand 3,657-82 ft.
H. L. Hunt's No. 1 A. Holt, 162 ft. from N and 257 ft. from E of A. Holt 40-ac. tract, S. P. Hollingsworth Sur. ..... Set 12½-in. csg. at 184 ft.
Jackson-Wise and Sneden, 215 ft. from E and 175 ft. from S of 40-ac. lease, M. J. Prue Sur. ..... Preparing to run tubing; shut down 3,620-57 ft.

Albert Jones' No. 1 John Minnifee, 100 ft. from S and 1,000 ft. from W of survey on 70-ac. tract, T. J. Walling Sur. ... Drlg. 1,420 ft.
C. C. Julian's No. 1 Motley, 760 ft. from N and 1,673 ft. from W of survey, J. T. McDaniels Sur. ... Set csg.; T. D. 191 ft.
Kimbrough et al's No. 1 Weatherby, 300 ft. from N and 300 ft. from E, Robert Martin Sur. ... Drlg. 3,650 ft.
Leonard Petroleum Co.'s No. 1 Sanger Bros., 390 ft. from N and 350 ft. from W of survey, J. P. Meredith Sur. ... Shut down 3,519 ft.
Luling Oil & Gas Co.'s No. 1 Alford, 800 ft. from N and 4,820 ft. from E lines of the I. G. Parker Sur. ... Location.
Ray Martin et al's No. 1 Russell, 600 ft. from N and 150 ft. from E lines of lease in T. J. Martin Sur. ... Moving in.
Marr et al's No. 1 Lowna, 1,200 ft. from most westerly E line and 3,150 ft. from S line of survey, W. G. Tuttle Sur. ... Derrick.
Mass and Tucker's No. 1 Matthews, 3,244 ft. from N, 4,256 ft. from E, Dalines Cartimas Sur. ... Fishing 3,300 ft.
H. C. McBride's No. 1 Sue Hale, 150 ft. from S and 150 ft. from W of Sue Hale 88-ac. tract, John Darley Sur. ... Rig up.
McMurray's No. 1 Sam Stone, 1,700 ft. from N and 6,300 ft. from W of survey ... Drlg. 3,572 ft.
Frank Melat's No. 1 Newton Orr, 300 ft. S of N line of 202½-ac. tract, William Tippett Sur. ... Coring 2,800 ft.
Nat Saddler's No. 1 Ed Sparks, 350 ft. from E, 150 ft. from S of survey, L. C. Riggs Sur. ... Shut down 2,000 ft.
Pharis and Sample's No. 1 Deason, 1,558 ft. E and 155 ft. S of SE cor. of H. Brooks tract in M. J. Prue Sur. ... Set 6-in. csg. 3,619 ft.
Pitts et al's No. 1 Freeman, 1,000 ft. N of S line and 1,000 ft. E of W line of 181-ac. tract, J. Watkins Sur. ... Derrick.
Priest et al's No. 1 Mayfield, 155 ft. from N and W lines of 22-ac. lease in Daniel Clark Sur. ... Location.
Rowe et al's No. 1 Maxwell, 855 ft. from E and 237 ft. from S of B. F. Maxwell 59-ac. tract, R. H. Pinney Sur. ... Derrick.
Stokes et al's No. 1 Mrs. M. M. Talley, 4,100 ft. from W and 1,050 ft. from N of survey ... Moving in rig.
Shaheen and Keeler's No. 1 H. L. Griffin, 850 ft. from W and 2,000 ft. from S of survey, Juan Ximenes Sur. ... Derrick.
Sun Oil Co.'s No. 1 O. W. Knight, 1,350 ft. from N and 250 ft. from E of survey, D. Collins Sur. ... Drlg. 2,680 ft.
Suttles No. 2 Holland, 156 ft. from N and 152 ft. from W of Holland 41.7-ac. tract, M. J. Prue Sur. ... Shut down 2,300 ft.
The Texas Company's No. 1 Turner, 242 ft. from S and 242 ft. from W of survey, T. H. Smith Sur. ... Sand 3,596-3,602 ft.; top Austin chalk 3,470 ft.

SMITH COUNTY

Arkansas Drilling Co.'s No. 1 Wallace, 150 ft. from N and 150 ft. from E of 200-ac. tract, W. W. Avery Sur. ... Shut down 3,520 ft.
Bailey Gaunce et al's No. 1 S. S. Cook, 150 ft. from S and 150 ft. from W of S. S. Cook 20-ac. tract in 189-ac. tract, Juan Vargus Sur. ... Shut down 2,560 ft.
Big Indian Oil Co.'s No. 1 Holland, 2,384 ft. from N and 1,446 ft. from E line of survey, Thomas Allen Sur. ... Drlg. 3,770 ft.
J. H. Brogan, trustee's No. 1 T. O. Wright, 600 ft. from N and 200 ft. from E of survey, Juan Vargus Sur. ... Set 6-in. csg. 3,682 ft.; T. D.
G. B. Bunte, trustee's No. 1 A. S. Jarvis, 150 ft. from S and 150 ft. from W of 267-ac. tract, Juan Vargus Sur. ... Rig up.
Bunte et al's No. 1 Atkinson, 1,000 ft. from S line and 1,000 ft. from N line of 330-ac. tract, Calloway Dean Sur. ... Rig up.
Roy L. Carter's No. 1 T. O. Wright, 1,445 ft. from N and 152 ft. from E of survey, Juan Vargus Sur. ... T. D. 3,558 ft.; drlg. by tools.
Cotton Belt Oil Co.'s No. 1 C. S. Jackson, 500 ft. from N and 500 ft. from W of 39.88-ac. tract, Henry Mickleborough Sur. ... Spudded and shut down.
Deason Oil Co.'s No. 1 T. O. Wright, 1,440 ft. from N and 250 ft. from W of T. O. Wright 86-ac. tract, Juan Vargus Sur. ... Location.
Dumas' No. 1 Cooke, 1,558 ft. SE along center line of Highway No. 64 from point where S. S. Cooke 17.6-ac. tract W line intersects highway and 942 ft. at right angles to road, James Jordan Sur. ... Sand 3,705-07 ft.; top Austin 3,541 ft.; base 3,762 ft.
East Texas Refining Co.'s No. 1 Colored Methodist Church, James Jordan Sur. ... Rig up.
Hancock and McCarthey's No. 1 J. C. Cross, 200 ft. from E of road and 200 ft. N of S line of survey on a 13-ac. tract, Burbridge Sur. ... Derrick.
John Hoosier et al's No. 1 W. T. Roberts et al, 360 ft. from N and 277 ft. from W lines of 13⅓ acres in Juan Vargus Sur. ... Derrick.
H. L. Hunt's No. 1-B R. W. Fair, 250 ft. from S and E lines of 138.5-ac. tract in Juan Vargus Sur. ... Location.
H. L. Hunt's No. 3 Fair, 150 ft. from W and 4,500 ft. from S of survey, Richard McAlnulty Sur. ... Top Austin chalk 3,475 ft.; base 3,655 ft.; sand 3,664-92 ft.
Imperator Oil Co.'s No. 1 I. M. Green, 140 ft. from S and 165 ft. from E line of Green 86.5-ac. tract, NW of Overton and N and a little E of Big Indian No. 1 Holland ... Drlg. 1,850 ft.
Joiner et al's No. 1 W. W. Wright, 847.5 varas from E and 647 varas from S of NW Wright 225-ac. tract, Van Sickle Sur. ... Shut down 4,210 ft.
Lawrence E. Ketch's No. 1 T. O. Wright, 700 ft. from E and 750 ft. from N of survey, Juan Vargus Sur. ... Drlg. 1,275 ft.
Magnolia Petroleum Co.'s No. 3 J. R. Wright, 812 ft. from N and 2,050 ft. from E of survey, Juan Vargus Sur. ... Drlg. 500 ft.
Magnolia Petroleum Co.'s No. 4 J. R. Wright, 1,453 ft. from N and 250 ft. from E of 87.5-ac. tract or lease, Juan Vargus Sur. ... Location.
Magnolia Petroleum Co.'s No. 2 Loosier, 338 ft. E and 300 ft. N of NW cor. R. L. Henson 54-ac. tract in Juan Vargus Sur. ... Drlg. 3,184 ft.
Magnolia Petroleum Co.'s No. 4 Loosier, 175 ft. from S and E lines of 127.7-ac. tract in Juan Vargus Sur. ... Location.
McCarthey and Hancock's No. 1 Nellie Taylor, 250 ft. out of SW cor. of 73-ac. Taylor tract, F. M. Taylor Sur. ... Derrick.
McMillan's No. 1 Wright, 784 ft. from N and 171 ft. from W of T. C. Wright 86-ac. tract, Juan Vargus Sur. ... Derrick.
Morrison's No. 1 L. Roy, 330 ft. N and E from SW cor. of 87-ac. tract in Henry Cools Sur. ... Shut down 3,350 ft.
M. M. Rowand et al's No. 1 Gibbons, 1,800 varas from W and 240 varas S of river (which is N line of survey), J. M. Garcia Sur. ... Shut down 1,860 ft.
Ruffin and Williams' No. 1 Hamp Florence, 700 ft. from N and 200 ft. from E of 192.5-ac. tract, Barnes Clark Sur. ... Coring 3,965 ft.
Sinclair Oil & Gas Co.'s No. 2-B Jarvis, 250 ft. from E and 300 ft. from S of Jarvis B lease, Juan Vargus Sur. ... Top Pecan Gap 2,700 ft.; base 3,055 ft.; top Austin chalk 3,505 ft.; base 3,652 ft.; sand 3,670-75 ft.; T. D.
Sinclair Oil & Gas Co.'s No. 1 Mayfield, 2,194 ft. from N and 3,625 ft. from W of 376-ac. Mayfield lease, James Jordan Sur. ... Derrick.
Sinclair Oil & Gas Co.'s No. 2-A Jarvis, 275 ft. from E and 203 ft. from S lines of Jarvis "A" lease in Juan Vargus Sur. ... Location.
Sun Oil Co.'s No. 1-B Ritch, 300 ft. from N and 281 ft. from W lines of 54-ac. tract in Juan Vargus Sur. ... Rig up.
Sun Oil Co.'s No. 1 J. A. Layne, 330 ft. from N and 330 ft. from E of 103.7-ac. tract or survey, Samuel Dexter Sur. ... Drlg. 1,923 ft.
The Texas Company's No. 3 Blackwell, 330 ft. from S and E lines of 100-ac. tract in James Jordan Sur. ... Location.
Mrs. S. O. Thompson's No. 1 S. S. Cooke, center of 5-ac. tract and lease in James Jordan Sur. ... Location.

TITUS COUNTY

H. V. Cook's No. 1 M. C. Rogers, center of SW of Moore Sur. ... Moving in rig.

UPSHUR COUNTY

Brennan and Wood's No. 1 Robertson, center of Robertson 41-ac. tract, Ira Stephenson Sur. ... T. D. 3,690 ft.; waiting on orders.
Joe Burnham's No. 1 Lena Beck, 4,000 ft. from S and 1,200 ft. from W of survey, H. W. Augustine Sur. ... Sand and ash 3,763-75 ft.; top Pecan Gap 2,536-2,895 ft.; tested 30 joints salt water in 30 minutes.
Cockrell et al's No. 1 C. A. Lee, 150 ft. from S and 150 ft. E of 26½-ac. tract, W. L. Palmer Sur. ... Derrick.
Callahan et al's No. 1 Lee R. Kay, 660 ft. from N and E lines of Charles O'Neal Sur. ... Derrick.
Cranfill & Reynolds' No. 2 A. D. Porter, 930 ft. S and 450 ft. E of NW cor. 13⅓-ac. tract in G. W. Hooper Sur. ... Set 10-in. csg. 110 ft.
Daniel and Hargrove's No. 1 Ann Callahan, 150 ft. from E and 150 ft. from S of 38-ac. tract, E. A. J. Evans Sur. ... Set surface csg.
Decker et al's No. 1 T. A. Webb, 150 ft. from N and 150 ft. from W of 34.25-ac. tract and lease, G. H. Hooper Sur. ... Oil sand 3,695-3,733 ft.; T. D.; initial prod. 91 bbls. pinched on eleven-sixteenths-inch choke.
Dumas et al's No. 1 A. O. Phillips, 150 ft. from N and 150 ft. from E of W 25.2-ac. of 75-ac. tract, S. Harrell Sur. ... Set 10-in. csg. 90 ft.
A. H. Farver et al's No. 1 J. W. Free, 1,000 ft. N of SE cor. A. D. Porter tract and 463 ft. E at right angles, G. W. Hooper Sur. ... Derrick.
Home Oil Co.'s No. 1 F. D. Futrell, 150 ft. out of SW cor. and 520 ft. from E and 400 ft. from S line of 7.6-ac. tract, A. Lumbrara Sur., south of Gilmer ... T. D. 2,396 ft.
Humble Oil & Refining Co.'s No. 1 A. O. Phillips, 258 ft. from N and 195 ft. from W of 25-ac. tract, S. Harrell Sur. ... Base Austin chalk 3,604 ft.; sand 3,627-45 ft.; T. D.; swabbing.
Magnolia Petroleum Co.'s No. 2 Howard Hampton, 215 ft. from NW and 215 ft. from SW of 169-ac. lease, David Ferguson Sur. ... Oil sand 3,594-98 ft.; set csg. 3,590 ft.
McMahon and McCullough's No. 1 E. H. Hamilton, 200 ft. from E and 150 ft. from S of 88-ac. tract, M. Chandler Sur. ... Spudded and shut down.
McPhail and Smith's No. 1 Kay, 660 ft. from S and 660 ft. from W line of J. Elliott Sur., 1½ miles S of Big Sandy ... Shut down 3,619 ft.; drill stem test showed mud and water.
G. P. Mitcham's No. 1 J. B. Bland, 165 ft. from E and 650 ft. from S of 62½-ac. tract and 15-ac. lease, G. W. Hooper Sur. ... Derrick.
W. H. Peckham et al's No. 1 J. L. Bland, center of W half of S 30 acres of 62½-ac. tract, G. W. Hooper Sur. ... Shut down for water; T. D. 2,927 ft.
Sorrels & Duffey's No. 1 J. W. Wooden, 200 ft. from E and 200 ft. S of survey, Isham Williams Sur. ... Shut down 100 ft.
Sun Oil Co.'s No. 1 Vida Lee Loden, 290 ft. from N and 290 ft. from S and 150 ft. from W lines of 27.5-ac. tract in G. W. Hooper Sur. ... Rig up.
A. A. Trammell's No. 1 O. M. Victory, 150 ft. from E and 150 ft. from S of SW 100 acres of survey, E. A. J. Evans Sur. ... Top Austin chalk 3,543 ft.; T. D. 3,558 ft.
Feazel & Curtis et al's No. 1 W. M. Phillips, 300 ft. from E and 300 ft. from S of 67½-ac. tract and lease, H. Edwards Sur. ... Sand 3,606-36 ft.; set 6⅝-in. csg. 3,606 ft.
R. M. Weaver, Jr. et al's No. 1 L. J. Everett, 330 ft. from E and 330 ft. from S of 173-ac. tract, W. Goodwin Sur. ... Oil sand 3,615-19 ft.; running tubing.

VAN ZANDT COUNTY

Barton et al's No. 1 C. L. Hubbard, 600 ft. out of NE cor. of Hubbard 225-ac. tract, 3½ miles S of Canton, M. J. Cadena Sur. ... Spudded and shut down.
Hart Petroleum Corp.'s No. 1 M. L. Cox, 1,785 ft. N of S line and 534 ft. E of W line of Cox 300-ac. tract in Nugent Headright Sur. ... Drlg. 1,975 ft.
H. Holms et al's No. 1 Bogue, 647 ft. W and 155 ft. S of SE cor. of J. M. Brown 70-ac. in Marshall University Sur., SE of Van ... Shut down 3,098 ft.
Joiner et al's No. 1 J. S. Meeks, 330 ft. out of the NE cor. of the 320-ac. tract, A. Ducher Sur. ... Fishing 2,548 ft.
Humble Oil & Refining Co.'s No. 1 L. A. Dowdle, 1,027 ft. N of S line and 150 ft. E of W line, William Daniel Sur. ... Temp. abnd. 2,987 ft.
Kelly Oil & Gas Co.'s No. 1 Lemsford, center of Lemsford tract, John Conner Sur. ... Shut down 2,300 ft.
Neil McMehory's No. 1 R. V. Murphy, 150 ft. from N and 150 ft. W of survey, H. Bailey Sur. ... Shut down 2,450 ft.
W. P. Palmer et al's No. 2 W. P. Forster, 400 ft. from N and 450 ft. from E of SW cor. of Forster 151-ac. tract in the F. Montgomery Sur. ... Shut down 3,000 ft.
W. A. Phillips et al's No. 1 Morris, 1,050 ft. S of N line and 350 ft. W of E line of center west of Morris 160-ac. tract in the C. L. Morris Headright Sur. ... Waiting on drill stem.
Pure Oil Co.'s No. 1 J. C. Stewart, 150 ft. N of S line and 150 ft. W of E line of 90-ac. tract, A. McPhail Sur. ... Coring 2,982 ft.
Pure Oil Co.'s No. 2, 500 ft. N of S line and 650 ft. E of W line of lease, John Waiting Sur. ... Drlg. 1,740 ft.
Pure Oil Co.'s No. 5 O. L. Swain, 200 ft. N of S and 200 ft. E of W line of lease, John Waiting Sur. ... Drlg. 1,827 ft.
Pure Oil Co.'s No. 1 M. L. Gilbert ... Running liner 2,915 ft.
Van Oil Association's No. 1 Tankersley, 200 ft. from E and 1,000 ft. from S of farm, L. Landers Sur. ... Fishing 2,530 ft.

WOOD COUNTY

Loche & Clark's No. 1 A. C. Pick, 165 ft. S of NE cor. G. C. Reeves 25-ac. tract, Daniel Fuller Sur. ... Shut down 2,008 ft.
Deep Rock Oil Co.'s No. 1 Maud Smith, center of Maud Smith S 40-ac. tract, L. Johnson Sur. ... Shut down 4,050 ft.
Main Holding Co. and Thelma Wells' No. 1 Stewart, 1,938 ft. from NE and 2,898 ft. from E line of survey, E. Rehorse Sur. ... Shut down 500 ft.
Vitek Oil Co.'s No. 1 Rosa Bogel, 350 ft. from N and 500 ft. from W of survey, Sarah English Sur. ... Shut down 2,486 ft.
M. O. Walmer Oil Co.'s No. 1 J. A. Ivey, center of 57-ac. tract, 2 miles NE of Mineola, A. Hamilton Sur. ... Coring shale 3,250 ft.

PATENT NOTICE

Fractional Distillation

The Foster Wheeler Corporation is a pioneer designer and manufacturer of tube still, tower and auxiliary equipment for continuous fractional distillation.

The Atlantic Refining Company is outstanding in the development and use of fractional distillation apparatus and methods.

Foster Wheeler equipment is protected and covered in the United States and foreign countries by patents granted and pending. The Foster Wheeler Corporation has secured important patent rights from the Atlantic Refining Company by license under:

Chillas Reissue Pat. No. 17,595, granted February 18, 1930
Weisberg Pat. No. 1,676,232, granted July 3, 1928
Lewis Pat. No. 1,680,421, granted August 14, 1928
Chillas Pat. No. 1,738,036, granted December 3, 1929
Chillas Pat. No. 1,748,595, granted February 25, 1930
Chillas Pat. No. 1,748,704, granted February 25, 1930
Cooke Pat. No. 1,748,411, granted February 25, 1930
Cooke Pat. No. 1,748,508, granted February 25, 1930

Notice is hereby given that the Foster Wheeler Corporation will take whatever legal action is necessary to fully enforce its patent rights.

FOSTER WHEELER CORPORATION
165 Broadway, New York, N. Y.
Branches in Principal Oil Centers

Foreign Associates: Foster Wheeler Limited, London, England.
Foster Wheeler Limited, Toronto-Montreal, Canada.
Societe Anonyme Foster Wheeler, Paris, France.

Brief Items for Petroleum Refiners

CALIFORNIA STANDARD LEADS IN MAY SALES

Standard Oil Co. of California again led the list of marketers in the sale of gasoline in California during May as shown by the report of the state board of equalization. A gain of 13.3 per cent in the gallonage was made over April which brought the total volume to 27,003,863 gallons. The Shell Petroleum Corp. again ranged second in the list having increased its sales 17.9 per cent bringing its total gallonage to 22,525,846, the increase of 3,421,705 gallons recorded over April being more than any other marketer.

The May total for the 13 largest marketers are shown below:

	May	Increase	Pct. inc.
Standard	27,003,863.6	3,176,299.6	13.3
Shell	22,525,846.2	3,421,705.2	17.9
Union	15,805,372.5	2,254,526.5	16.6
General	14,522,969.8	774,802.2	5.6
Associated	12,635,074	2,356,387	22.9
W. C. McDuffie*	12,571,288	1,710,448	15.7
Texas	5,495,781	818,564	17.5
Wilshire	3,211,314	726,205	29.2
U. S. Ref. ...	2,772,057.5	148,903.5	5.6
Robt. C. Gillis†	2,712,413	1,171,166	76.3
Hancock	2,621,930	191,204	7.8
Rio Grande ..	1,905,467.1	146,251.1	8.3
Macmillan ...	1,512,068	170,275	12.6

*Receiver for Richfield Oil Co. of California. †Receiver for Western Oil & Refining Co.

KETTLE CREEK BUYS CRUDE

The Primrose Oil Co. has entered into a contract with the Kettle Creek Refining Co., El Dorado, Ark., to deliver 250,000 bbls. of crude at a rate of 4,000 bbls. a day to that company's plant at El Dorado, the refining company paying for the crude as used, the price to be regulated by a sliding scale to correspond with the average price paid for oil in the field. The latter company is to pay the Atlas Pipe Line Co. a 7½-cent gathering charge and 20-cent transportation charge on the oil which is to be delivered to the refinery at El Dorado by the Atlas Pipe Line Co.

SLACK STARTS PLANT

The Slack Refining Co. has started operating its new skimming plant located at Camps Switch near Longview in Gregg County of East Texas. The plant will be operated on a basis of 2,000 bbls. daily. The crude oil is furnished by the Pilot Oil Co. from the Lathrop Pool. The plant is located on the Texas & Pacific railroad.

FIRE AT FREEDOM REFINERY

FREEDOM, Pa., June 27.—Fire of unknown origin damaged the local refinery of the Freedom Oil Works Co. last night. Building and equipment valued at approximately $100,000 were destroyed and $200,000 worth of crude oil and refined products also burned. The plant is to be repaired immediately.

FULLER'S EARTH OUTPUT

Fuller's earth sold or used by producers in the United States in 1930 amounted to 335,644 short tons, valued at $4,326,705, as announced by the United States Bureau of Mines. This is an increase of 6 per cent in quantity and a small increase in total value in comparison with 1929. Output was reported by 15 operators in seven states in 1930, namely, Colorado, Florida, Georgia, Illinois, Massachusetts, Nevada and Texas.

Georgia was the leading producing State in 1930. Florida was second and Texas third. These three in 1930 produced 82 per cent of the total output. The average value per ton was $12.80, compared with $13.64 in 1929.

MAY OPERATE CENTRAL BOWLING GREEN PLANT

BOWLING GREEN, Ky., June 26.—John Frankenburg and George B. Dilley, of Youngstown, Ohio, are contemplating the purchase of the old Central Refining Co., located on the banks of the Barren River at the corner of First Street and Louisville and Nashville Railroad, in Bowling Green. In the near future they also expect to enter into the refining industry for the making of lubricating oils and greases.

Mr. Frankenburg and Mr. Dilley have extended an invitation to all producers of Warren, Allen and Simpson Counties to visit the plant. The refinery will take care of a large amount of the surplus crude throughout these counties, and if production warrants, they expect to put in more modern equipment and enlarge the production to an increased capacity. The refinery will be opened with a view to co-operation with the owners of the various production of crude oil in the three counties mentioned.

GLOBE REFINERY PLANS

I. A. O'Shaughnessy of Minneapolis, Minn., president of the Globe Oil & Refining Companies, in Tulsa last week, said that plans were not completed for the construction of a refinery in the McPherson, Kans., Pool. The Globe company is planning on building a refinery which will have both skimming and cracking equipment. The same interests are considering the construction of a refinery to operate with East Texas crude oil. The plant, if built, will be located either in East Texas or Gulf Coast.

N.P.A. VISITS REFINERY

NEW YORK, June 27.—Sinclair Refining Co. was host yesterday to members of the National Petroleum Association at the company's recently remodeled refinery at Wellsville, N. Y.

The inspection got under way about 10 a. m. with parties of from 10 to 15 covering the plant under escort of members of the plant operating personnel who are thoroughly familiar with the various processes.

The entire refinery was thrown open to the N.P.A. members through arrangements made by the department of manufacture of the Association and Sinclair officials, and the special features of the plant came in for close inspection. The plant was described in an article appearing in December 11, 1930, issue of The Oil and Gas Journal, page 67.

W. F. FARAGHER JOINS VACUUM PLANT STAFF

Dr. W. F. Faragher, widely known among petroleum technologists has been appointed manager of research for the light oil division of the Vacuum Oil Co. He has his headquarters at the main laboratory of the company located at Paulsboro, N. J. His home is at Woodbury, N. J.

Doctor Faragher has contributed some outstanding work in the field of petroleum research in recent years. He also has been active in other chemical fields. For several years he was a member of the faculty of the University of Pittsburgh and a member of the staff of the Mellon Institute of Industrial Research. For five years he has been a member of the research staff of the Universal Oil Products Co.

AGREE UPON BASIS FOR VACUUM-SOCONY MERGER

Subject to the approval of the stockholders in the two companies, the board of directors of the Vacuum Oil Co. and Standard Oil Co. of New York have approved a plan whereby stockholders of the Vacuum will receive two and one-half shares in the merged company for each share of Vacuum and those holding Standard of New York will receive share for share.

Under the original agreement which was announced officially on February 21, 1930, the Vacuum stockholders were offered three shades of stock of General Petroleum Corp., which was to acquire all Standard Oil-Vacuum assets, and Standard Oil shares were to be exchanged on a share for share basis.

The announcement today disclosed also that the name of the merged company will be "Socony-Vacuum Corp.," instead of General Petroleum.

SMALL SKIMMING PLANT

A small refining plant will be built near the town of Troy, Perry County, in the southern part of Indiana. This was announced recently by Roger E. Williams of Evansville, vice president and manager of the Santa Fe Oil Co., Inc. Frank Bonnell, Lexington, Ky., backed by Lexington capital, is financing the project. The refinery will according to report have a capacity of 500 bbls. a day. Crude oil from the leases of Packard Oil Co., Inc., Evansville; Clarence Daugherty, Owensboro, Ky.; Paul I. Amus, Pittsburgh; the Santa Fe Oil Co., Inc., whose offices are in Tell City, and Buggs and Conyers, Evansville, will be refined in Troy. The latter company, which recently brought in a large shallow oil producer on the Lee Aders farm, in Clark Township, Perry County, and at the town of Bristow, will pipe the crude oil 18 miles to the proposed refinery sight.

Transportation facilities for the finished products from the plant will be furnished by the Ohio River, 200 yards from the proposed site, and by the Southern Railroad, three-fourths of a mile distant.

ERECT SMALL PLANT

DENVER, Colo., June 29.—The Oreana Refining Co. has received equipment at Kemmerer, Wyo., for a small refinery to be erected on the property of the Calmonica Petroleum Corp. in Section 17-27-113, LaBarge Field, in Sublet County. Claude P. Fitzpatrick, who is in charge of the field operations of the Calmonica company, is identified with the new company and C. H. Riley, recently of California, will be manager. Mr. Fitzpatrick formerly was with The Texas Company. The Calmonica company, formerly the Circle Oil Co., completed a producing well on its property last fall which made 125 bbls. the first 24 hours. The oil tested 46.4° gravity. The topping plant will have a capacity of 75 bbls. daily.

INDIAN STATE PLANT

The Indian State Oil Co., with large potential production in the Kilgore area of East Texas, is considering the construction of a skimming plant at Kilgore. The company is constructing a 25-car loading rack at that point and is reported to be negotiating for a refinery site. The proposed plant will have a capacity of 10,000 bbls. daily. K. W. Sappington is president of the Indian State company, which has offices in the Allen Building, Dallas, Tex.

H. M. NOEL MANAGER OF NEW FRENCH REFINERY

NEW YORK, June 27.—H. M. Noel, for the past two years assistant to T. R. Parker, adviser to the European refining interests of Standard Oil Co. (New Jersey), and previously assistant to Dr. N. E. Loomis, former director of the experimental division of the old development department of the Jersey company, has been placed in charge of construction of the large new refinery being established at Port Jerome, 120 miles from Paris on the River Seine, by Societe Franco-Americaine de Raffinage, an affiliattion of the Jersey company's French interests. The Gulf Oil Corp. and Atlantic Refining are also interested in the new plant, which is expected to be completed and in operation early in 1933.

Announcing the start of construction work on the new plant, the New Jersey company says:

"Recent changes in the importation laws and increases in duties levied on petroleum products have made it desirable to refine such products in France. Several large foreign oil companies already operate refineries in that country, and with the adoption of the new policy others have already begun construction or contemplate building operations in the immediate future.

"Eventually, it is expected that French markets for petroleum products will be supplied entirely from the output of French refineries. The crude for these plants for the present will continue to be supplied from United States Gulf and South American export points. Later, with the opening of rich reserves in Mesopotamia, a good part of the crude supply of French refineries will come from the Iraq fields.

"Port Jerome, the site of the new Franco-Americaine plant, is located between Havre and Rouen. According to present plans, crude will be shipped by tanker to Havre and from there transported 20 miles by pipe line to the refinery.

"The Franco-Americaine plant, which is designed to supply the total requirements of the company's marketing organizations in France, will be constructed according to plans drawn up by the general engineering department, and will be complete and up-to-date in every respect. It will utilize pipe stills exclusively, will be equipped with three 1,000-pound cracking coils, and a complete asphalt unit. Even sulphuric acid has been provided for, a small plant now being in construction adjacent to the company's property. To as great an extent as practicable, construction material will be drawn from French sources."

TO BUILD SMALL PLANT NEAR GLADEWATER, TEX.

GLADEWATER, Tex., June 28.—H. L. Lockhart of El Paso, Tex., will build a 300-bbl. skimming plant one-half mile east of this city for the purpose of supplying the local demands only. Gasoline and fuel oil will be the principal products.

WADHAMS BUYS 100 STATIONS

CHICAGO, June 29. — Approximately 100 bulk and filling stations have been added to the Wadhams Oil Co. string of outlets in Wisconsin as the result of the sale of all interests in the Barkhausen Oil Corp. to the Vacuum Oil Co. About a year ago controlling interest was purchased by the Vacuum and the method of operation was not changed. Under Wadhams the same operating procedure will be maintained, Mr. Barkhausen continuing as president of the company.

Manufacture of Natural Gasoline

Butane Plants Used As Step to Develop Future Gas Business

SAN FRANCISCO, Calif., June 30.—The Standard Oil Co. of California, through its subsidiaries, the Pacific Public Service, the Natural Gas Corp. of Oregon, Natural Gas Corp. of Washington and the Natural Gas Corp. of California, is gradually extending the distribution of butane, a product of its natural gasoline plants and refineries, into Pacific areas extending from Mexico to Canada.

The construction program of the subsidiaries of Pacific Public Service, formulated early last year, has been completed. There are 19 butane plants in operation in towns ranging in size from 1,100 to 16,000 population and with a total of approximately 93,000 residents. It has been estimated these plants represent approximately 20 per cent of the plants of this kind in service in the United States. According to estimates presented by Pacific Public Service, there are approximately 90 butane (petroleum gas liquefied under pressure and transported in tank cars to consuming territory) gas plants in operation in this country.

Plants of Pacific Public Service subsidiaries are designed to vaporize the liquid gas and serve to consumers through conventional distributing systems under high pressure. There are many butane plants in operation, but they serve undiluted gas of high heat content through low pressure systems.

Characteristics of this new type of gas service allow almost unlimited expansion. During 1930, when only a few of these plants were in operation, and then in the latter part of the year only, gas sales through the new service totaled 58,866,000 cubic Feet. Official estimates place sales during the current year at 443,366,000 cubic feet and further expansion is contemplated.

Because of the simplicity of construction and full automatic operation, installation of these new butane gas plants requires greatly reduced capital investment as compared to that of the conventional gas system, either manufactured or natural. This facor of reduced investment naturally permits the establishment of gas plants and distribution systems in communities hitherto considered beyond the possibilities of economic and profitable service of gas.

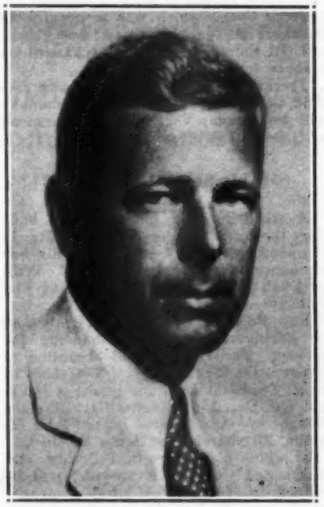
In consideration of the extension of gas service through the use of butane, the fact of protection of territory is of prime importance. Communities which now are in the path of future gas transmission lines, or in naturally contiguous territory to future development, may be lost to the individual manufactured gas plant operator unless protected against the day when tentative expansion plans become a surety.

Therefore, it is obvious that the application of butane service, through methods being employed by Pacific Public Service in sizeable communities, is valuable to the company from a long pull viewpoint. Subsidiaries can acquire territory along the Pacific Coast and operate butane plants until it is profitable to link them with a pipe line supply.

The development of the marketing of butane is gradually being followed up by supplying natural gas from the company's large gas reserves. The known reserves in the Kettleman Hills area assures the company of an adequate supply for many years and the problem will be one of marketing in the future.

CALIFORNIA DIRECTORS ELECT EXECUTIVE COMMITTEE MEMBERS

At the regular meeting of the board of directors of the California Natural Gasoline Association held here yesterday the following were elected to be the executive committee to serve during the coming year: R. E. Beckley, Standard Gasoline Co.; L. V. Cassaday, Lomita Gasoline Co.; H. L. Eggleston, Gilmore Gasoline Co.; R. W. Garman, Union Oil Co.; J. N. Hicks, Superior Oil Co.; H. R. Linhoff, Richfield Oil Co.; N. H. Mull, The Texas Company; E. L. Tobias, the Norwalk Co., and J. S. Watson of the Shell Oil Co.



O. C. Field
President

Wallace McIlhany
Secretary and Treasurer

It was also announced at the meeting that Charles Reichert of the National Supply Co. has been appointed chairman of the new membership and reception committee for the association. Mr. Reichert has been instrumental in securing several new memberships for the association.

The regular July meeting of the association will be held July 9 at 6:30 p. m. in the ballroom of the Hotel Alexandria in this city. G. Wesley Gebb of the state department of industrial relations will speak on "Co-operation in Safety Work an Economic Necessity."

The meeting yesterday was the first at which the new officers of the association presided. The officers recently elected are as follows: O. C. Field, president of the O. C. Field Gasoline Corp., president; R. C. Wheeler of the General Petroleum Corp., vice president. The following members were elected to the board of directors for a two-year term: R. E. Beckley, Standard Gasoline Co.; A. H. Bell, Continental Oil Co.; A. H. Bradford, West Coast Refining Co.; R. W. Garman, Union Oil Co.; J. N. Hicks, Superior Oil Co.; H. R. Linhoff, Richfield Oil Co.; S. F. Magor, Pacific Western Oil Co.; R. W. Heath, Signal Oil & Gas Co.; W. M. Young, The Texas Company; H. E. Moulton, C. C. M. O. Co.; A. M. Porter, Shell Oil Co.; W. D. Smith, Wilshire Oil Co.; E. L. Tobias, Norwalk Co.; J. S. Watson, Shell Oil Co., and O. Weaver, Barnsdall Oil Co.

R. C. Wheeler
Vice President

The remainder of the board of directors whose term of office with one year still to run are: L. V. Cassaday, Lomita Gasoline Co.; Earle Derby, Standard Oil Co.; H. L. Eggleston, Gilmore Oil Co.; F. H. Etheridge, Rio Grande Oil Co.; R. H. Green, Signal Oil Co.; R. E. Haylett, Union Oil Co.; Dana Hogan, Los Nietos Production & Refining Co.; B. A. Koehler, George F. Getty Oil Co.; P. S. Magruder, General Petroleum Corp.; N. H. Mull, The Texas Company; E. R. Pratt, Honolulu Consolidated Oil Co.; W. N. Roper, Western States Gasoline Corp.; M. P. Simon, State Gasoline Co.; R. C. Wheeler, General Petroleum Corp., and H. W. Wickstrom, Associated Oil Co.

The California manufacturers are planning to have the most active year in the history of the association. Although natural gasoline expansion has been curtailed in California as in other states due to price conditions, there are important developments under way along technical lines. The association will continue its monthly meetings at which these technical developments will be discussed.

ANNOUNCE NEXT YEAR'S PROGRAM TAFT CHAPTER

LOS ANGELES, Calif., June 27.—At the regular monthly meeting of the Taft chapter of the California Natural Gasoline Association held June 18, a paper on "Safety in Gasoline Plant Design," was given by B. F. Masten, consulting engineer, of Los Angeles, together with a film of the manufacture of butt-weld and seamless Spang Chalfant tubular goods, which was shown by Charles Reichert, through the courtesy of the National Supply Co. The directors of the Taft chapter for the coming year were named by Ralph Haun, chairman, as follows: N. B. Holbrook, Standard Oil Co.; J. B. Stevens, Associated Oil Co.; D. R. Taylor, Lovel Gasoline Co.; Harold Keans, Union Oil Co.; W. H. Kraft, Honolulu Consolidated Oil Co.; Clyde Peters, Belridge Oil Co.; L. Ross, Standard Gasoline Co.; R. Donaldson, Standard Oil Co.; S. S. Donaldson, Southern California Gas Co., and I. H. Westmoreland, O. C. Field Gasoline Co.

N. B. Holbrook, retiring chairman, opened the meeting and introduced Ralph Haun, the newly elected chairman. Mr. Haun complimented Mr. Holbrook on the accomplishments of the Taft chapter during his chairmanship and presented Mr. Holbrook with a table smoking set in appreciation of his work during the past year. There was a good attendance at this meeting, visitors being O. C. Field and Mr. McIlhany, the newly elected president and secretary-treasurer, respectively, of the association. At the first meeting of the new board of directors of the Taft chapter the following tentative program was outlined for the year:

July 16, 1931, 5:30 p. m. "Hi Jinks" under a committee consisting of Charlie Miller, Jack Adams and Jim Wilt. It will be held at Fellows Boy Scout Grounds on Temblor Grade Taft chapter, C.N.G.A. annual sagebrush meeting. For $1.50 each member can play ball, make his own speech and eat plenty. It is suggested you make reservations at once with Herbert Stark, secretary, Taft chapter, Box H, Taft, Calif.

August 20—Pressure and Temperature Control, by Mr. Annon, Neilan Co.

September 17—Cooling Problems, W. H. Kraft, Honolulu Consolidated Oil Co.

October 15—K. N. DA. Gas Engineering Problems, G. L. Ross, Standard Gasoline Co.

November 19—Modern Refinery Operation and Utilization of Natural Gasoline, E. B. Ragatz, Union Oil Co.

December 17—(1) Marine Transportation of Petroleum Products, (2) Refinery Practices, by George Holms, Lakeview Oil & Refining Co.

January, 1932—Report by Pacific Coast Gas Association Committee on Compressor Problems, by S. S. Donaldson, Southern California Gas Co.

February—Corrosion, W. A. S. Harmon, the Elliott Co., Los Angeles.

March—Asphalt, speaker to be supplied.

April—Gas and Oil Injection, Ted Miles.

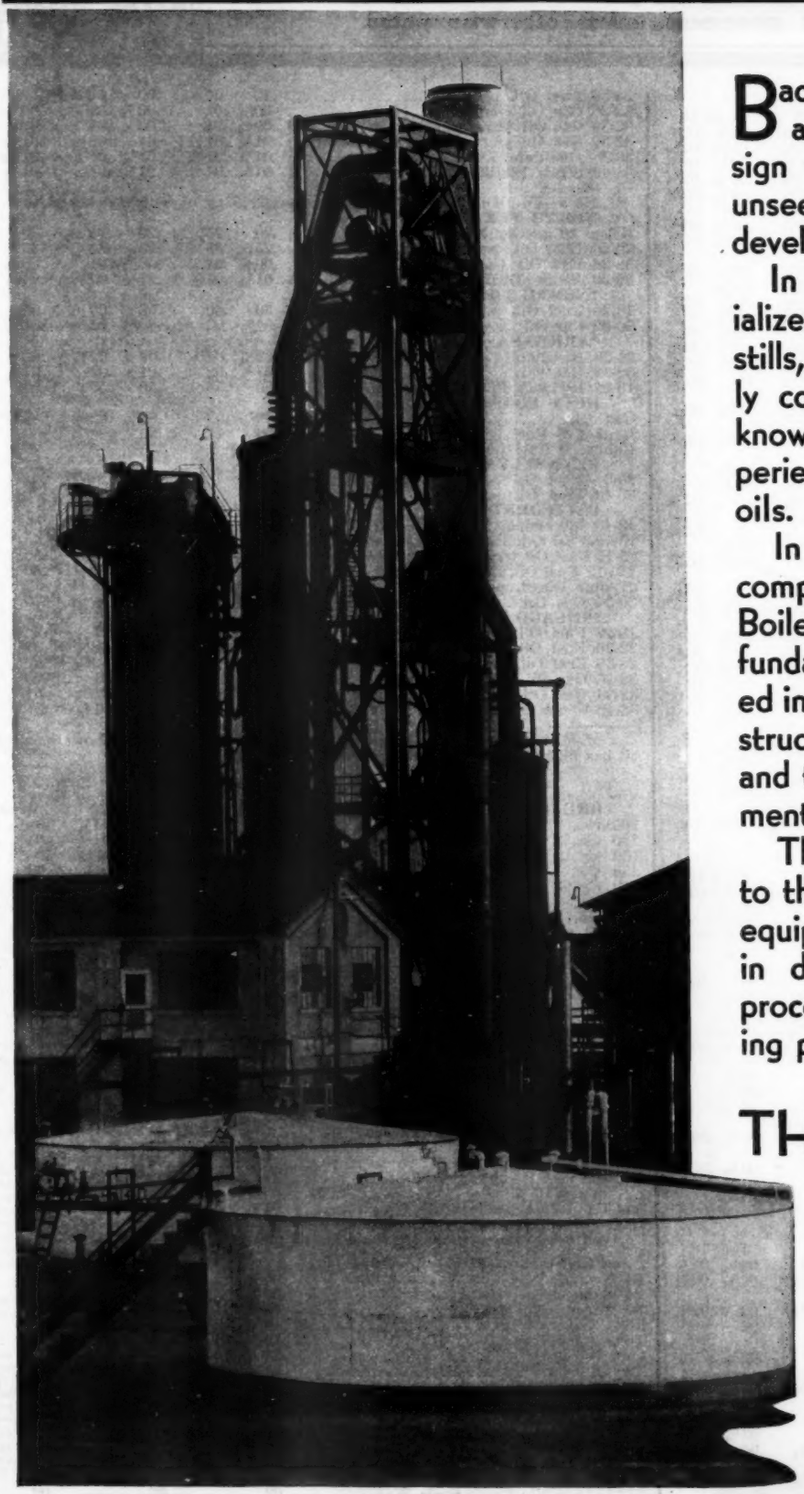
May—Absorber Intercooling, by F. L. Kallam, Foster Wheeler Corp., Los Angeles.

June—Natural Gas National Distribution, by H. P. George.

SHUT DOWN PLANT

FORT WORTH, Tex., June 30.—Roeser and Pendleton are shutting down their gasoline plant and nearly all wells in Cook Pool, Shackelford County, July 1. This move is being made because of present conditions of the industry. A total of 320 wells will be affected by this move.

THE UNSEEN BACKGROUND



Back of every Lummus Refining Unit and back of the Engineering Design which gave it birth, there is an unseen background of research and development work.

In laboratories equipped with specialized apparatus and small scale plant stills, Lummus Engineers are constantly contributing to the accummulated knowledge of scientific fact and experience in the processing of petroleum oils.

In the laboratories of our parent companies, The Babcock and Wilcox Boiler Co. and the Superheater Co., fundamental research is being conducted in the behavior of materials of construction under conditions of stress and temperature, and in the development of new materials.

These unseen efforts are devoted to the betterment of Lummus refinery equipment and are reflected concretely in dependable equipment, improved processes and plants of greater earning power.

THE LUMMUS CO.

Builders of Petroleum Plants

148 STATE STREET, BOSTON

30 CHURCH STREET, NEW YORK

LUMMUS PETROLEUM REFINING PLANTS

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

GASOLINE AND NAPHTHA

	June 30		June 23		June 16	
OKLAHOMA (Group 3)—						
50-52 450 endpoint	.02⅜	.02½	.02¼	.02⅜	.02⅜	.02½
56-58 450 endpoint	.02¼	.02½	.02	.02¼	.02⅜	.02¼
58-60 437 endpoint (U. S. Motor)	.02⅜	.02⅝	.02½	.02⅝	.02¼	.02¾
60-62 437 endpoint	.02⅜	.02⅝	.02¼	.02¾	.02⅜	.02¾
60-62 400 endpoint	.02⅝	.02⅞	.02⅝	.02¾	.02¼	.02⅝
64-66 375 endpoint	.03	.03⅛	.02¾	.03	.02¾	.03
68-70 360 endpoint	.03⅛	.03¼	.02⅞	.03¼	.02⅞	.03¼
64-66 437 endpoint (blend)	.02¼	.02½	.02	.02¼	.02⅛	.02½
NORTH TEXAS—						
50-52 450 endpoint	.02¼	.02½	.02¼	.02½	.02¼	.02½
58-60 450 endpoint	.02⅛	.02¼	.02	.02⅛	.02⅛	
58-60 437 endpoint (U. S. Motor)	.02¼	.02½	.02⅛	.02½	.02⅛	.02½
60-62 400 endpoint	.02½	.02⅝	.02¼	.02¾	.02⅝	.02¾
64-66 390 endpoint	.02⅝	.03	.02½	.03	.02½	.03
64-66 375 endpoint	.02⅞	.03¼	.02⅝	.03¼	.02¾	.03¼
68-70 360 endpoint	.03	.03¼	.02⅞	.03¼	.02⅞	.03¼
64-66 437 endpoint (blend)	.02¼	.02½	.02	.02½	.02	.02½
***NORTH LOUISIANA—**						
58-60 437 endpoint (U. S. Motor)	.02¾	.03	.02⅝	.02¾	.02¾	.03
***ARKANSAS—**						
58-60 437 endpoint (U. S. Motor)	.02¾		.02⅝	.02¾	.02⅝	.03
PENNSYLVANIA—						
52-54 Naphtha	.04¼		.04½		.04½	
54-56 Naphtha	.04⅝		.04½	.04¾	.04½	
58-60 Gasoline	.04⅝		.04½	.04¾	.04¾	.04⅞
60 Gasoline	.04½		.04¾	.05	.05	
62 Gasoline	.05	.05¼	.05	.05¼	.05	.05⅛
64 Gasoline	.05⅛		.05¼		.05⅛	
68-70 350 endpoint gasoline	.05¼	.05½	.05½		.05½	.05¾
CALIFORNIA—						
†54-58 437 endpoint (U. S. Motor) domestic	.05	.06½	.04½	.06	.03	.03½
†58-60 400 endpoint domestic gasoline	.04½	.06¼	.04	.06½	.03¼	.04
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 endpoint (Naphtha)	.02¼	.02½	.02¼	.02½	.02⅜	.02½
58-60 437 endpoint (U. S. Motor)	.02¼	.02½	.02⅜	.02½	.02¼	.02¾
60-62 400 endpoint	.02½	.02⅝	.02½	.02¾	.02¾	.03
64-66 375 endpoint	.02¾	.03	.02¾	.03	.02¾	.03
64-66 437 endpoint (blend)	.02⅛	.02¼	.02⅞	.02¼	.02¼	.02¼
68-70 360 endpoint	.03	.03¼	.03	.03¼	.03⅜	
GULF COAST (Export)—						
58-60 U. S. Motor	.03½		.03½		.03½	
60-62 400 endpoint	.03⅝		.03⅝		.03⅝	
61-63 390 endpoint	.03¾		.03¾		.03¾	
64-66 375 endpoint	.03¾		.03¾		.03¾	

*Louisiana, Arkansas, Mississippi and East Texas delivery. †For local consumption.

NATURAL GASOLINE

	June 30		June 23		June 16	
OKLAHOMA (Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.01⅞	.02	.01⅞	.02	.01⅞	.02
Grade AA, 80-87.9, 375 e.p., rec. 90%	.01⅝		.01⅝		.01⅝	
Grade B, 76-83.9, 375 e.p., rec. 85%	.01½		.01½		.01½	
Grade BB, 84-92, 375 e.p., rec. 85%	.01½		.01½		.01½	
Grade C, 80-92, 375 e.p., rec. 78%	.01½		.01½		.01½	
NORTH TEXAS—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.01¾	.02	.01¾	.02	.01⅞	.02
Grade AA, 80-87.9, 375 e.p., rec. 90%	.01⅝	.01½	.01½	.01⅝	.01⅝	
Grade B, 76-83.9, 375 e.p., rec. 85%	.01½		.01½		.01½	
Grade BB, 84-92, 375 e.p., rec. 85%	.01⅝	.01½	.01⅝	.01½	.01½	
Grade C, 80-92, 375 e.p., rec. 78%	.01⅝		.01⅝		.01½	
NORTH LOUISIANA—						
Grade AA, 80-87, 375 e.p., rec. 90%	.01⅝		.01⅝		.01⅝	
Grade BB, 84-92, 375 e.p., rec. 85%	.01½		.01½		.01⅝	
Grade C, 80-92, 375 e.p., rec. 78%	.01½		.01½		.01⅝	
CALIFORNIA—						
75-78 375-390 endpoint	.03¼	.04¼	.03	.04	.02¼	.02¾
CHICAGO DISTRICT (Based on Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.01⅞	.02	.01⅞	.02	.01⅞	.02
Grade AA, 80-87.9, 375 e.p., rec. 90%	.01⅝		.01⅝		.01⅝	
Grade BB, 84-92, 375 e.p., rec. 85%	.01½		.01½		.01½	

BURNING OIL

	June 30		June 23		June 16	
OKLAHOMA (Group 3)—						
41-43 water white kerosene	.01⅞	.02	.02	.02¼	.02⅛	.02½
42-44 water white kerosene	.02	.02¼	.02⅛	.02½	.02⅜	.02⅝
NORTH TEXAS—						
41-43 water white kerosene	.01⅜	.02	.02	.02¼	.02	.02¼
40-41 water white kerosene	.01¾		.02		.02	
***NORTH LOUISIANA—**						
41-43 water white kerosene	.02½		.02⅝		.02⅝	
***ARKANSAS—**						
41-43 water white kerosene	.02½		.02½	.02⅝	.02½	.02⅝
PENNSYLVANIA—						
43 Kerosene prime white	.03⅝		.03¾		.03¾	
45 Kerosene water white	.03⅝	.03¾	.03⅝	.04	.03¾	.04
46 Kerosene water white	.03⅞	.04⅛	.03⅞	.04¼	.04	.04¼
CALIFORNIA—						
38-40 water white Kero. (high burning test)	.04	.05½	.04	.05½	.03¼	.04¼
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white kerosene	.02	.02½	.02	.02½	.02½	
42-44 water white kerosene	.02⅛	.02¼	.02⅛	.02¼	.02⅝	
GULF COAST (Export)—						
41-43 prime white	.03½		.03½		.03½	
44 water white	.03½	.03¾	.03½	.03¾	.03½	.03¾

*Louisiana, Arkansas, Mississippi and East Texas delivery.

FUEL OIL

	June 30		June 23		June 16	
OKLAHOMA (Group 3)—						
Below 18 gravity Fuel Oil, per bbl.	.25	.30	.25	.30	.25	.30
18-22 Fuel Oil, per bbl.	.27½	.35	.27½	.35	.27½	.35
20-22 Fuel Oil, per bbl.	.30	.35	.30	.35	.30	.35
22-26 Fuel Oil, per bbl.	.35	.40	.35	.40	.35	.40
24-26 Fuel Oil, per bbl.	.40	.45	.40	.45	.40	.45
26-30 Fuel Oil, per bbl.	.45	.50	.45	.50	.45	.50
28-30 Fuel Oil, per bbl.	.45	.50	.50	.55	.50	.55
32-36 Gas Oil (industrial)	.00¾	.01	.00¾	.01	.00¾	.01
32-36 Gas Oil (straw color, high cold test)	.00¾	.01	.00¾	.01	.00¾	.01
32-36 Gas Oil (straw color, low cold test)	.01¼	.01½	.01¼	.01½	.01¾	.01½
36-38 Distillate	.01¼	.01¾	.01¼	.01⅝	.01⅝	.01⅝
38-40 Straw Distillate	.01⅝	.01¾	.01⅝	.01¾	.01½	.01¾

Note—Fuel Oils over 40 cold test generally 5 to 10 cents per barrel less.

NORTH TEXAS—						
Below 20 gravity Fuel Oil, per bbl.	.20	.25	.20	.25	.20	.25
24-26 Fuel Oil, per bbl.	.25	.35	.25	.35	.25	.35
32-36 Gas Oil (industrial)	.00¾	.01	.00¾	.01	.00¾	.01
38-40 Straw Distillate	.01¼	.01½	.01¼	.01½	.01¼	.01½
***NORTH LOUISIANA—**						
18-20 Fuel Oil, per bbl.	.50	.60	.50	.60	.55	.60
30-32 Gas Oil (low cold test)	.01¾	.02	.01¾	.02	.01⅞	.02
***ARKANSAS—**						
33-36 Distillate	.02¼	.02½	.02¼	.02½	.02¼	.02½
30-32 Gas Oil	.01¾	.02	.01¾	.02	.01¾	.02
16-22 Refinery Fuel Oil, per bbl.	.50	.55	.50	.55	.50	.55
GULF COAST (South Texas)—						
Gas Oil	.02½	.02¾	.02½	.02¾	.02½	.02¾
Bunker C Fuel (cargo lots), per bbl.	.60		.60		.60	
Bunker C Fuel (small lots)	.70		.70		.70	
PENNSYLVANIA—						
30-34 Fuel Oil	.02½		.02½		.02½	
36-40 Fuel Oil	.02½		.02½		.02½	.02⅝
CALIFORNIA—						
42-45 480 endpoint engine distillate	.04½	.06	.04½	.06	.03	.03½
15-19 Fuel Oil, Bunker (at tidewater), bbl.	.60	.80	.55	.80	.55	.80
15-19 Fuel Oil (cargo lots, at tidewater), bbl.	.55	.75	.55	.75	.55	.75
†15-19 Fuel Oil, f.o.b. tank cars	.35	.75	.30	.75	.30	.75
27 plus Diesel, per bbl.	.70	.95	.70	.95	.70	.95
30-34 Gas Oil	.70	.95	.70	.95	.70	.95
CHICAGO DISTRICT (Based on Group 3)—						
18-22 Fuel Oil, per bbl.	.20	.25	.22½	.27½	.22½	.27½
22-26 Fuel Oil, per bbl.	.25	.30	.27½	.32½	.27½	.32½
28-30 Fuel Oil, per bbl. (zero)	.42½	.47½	.47½	.52½	.47½	.52½
32-36 Gas Oil (industrial)	.00¾	.01	.00¾	.01	.00¾	.01
32-36 Gas Oil (zero)	.01	.01⅛	.01⅛	.01⅜	.01⅛	.01⅜
38-40 Straw Distillate	.01	.01¼	.01⅛	.01⅜	.01⅛	.01¾

*Louisiana, Arkansas, Mississippi and East Texas delivery. †Lowest priced fuel oil has high sulphur content.

LUBRICATING OIL AND WAX

	June 30		June 23		June 16	
OKLAHOMA (Group 3)—						
100 vis., 2 color, 20-25 cold test	.04½	.04¾	.04½	.04¾	.04½	.04¾
100 vis., 3 color, 20-25 cold test	.04¾	.04½	.04½	.04½	.04¾	.04½
150 vis., 3 color, 20-25 cold test	.06¾	.07¼	.06¾	.07¼	.06¾	.07¼
150 vis., 4 color, 20-25 cold test	.06	.06½	.06	.06½	.06	.06½
180 vis., 3 color, 23-28 cold test	.07¾	.08¼	.07¾	.08¼	.07¾	.08¼
180 vis., 4 color, 23-28 cold test	.07½	.08¼	.07½	.08¼	.07½	.08¼
180 vis., 5 color, 23-28 cold test	.07¼	.07½	.07¼	.07½	.07¼	.07½
200 vis., 3 color, 23-28 cold test	.08½	.09	.08½	.09	.08¾	.09½
200 vis., 4 color, 23-28 cold test	.08½	.09¼	.08½	.09¼	.08½	.09¼
200 vis., 5 color, 23-28 cold test	.08	.08½	.08	.08½	.08	.08½
240 vis., 3 color, 25-30 cold test	.10¾	.11¼	.10¾	.11¼	.10¾	.11¼
240 vis., 4 color, 25-30 cold test	.10	.10½	.10	.10½	.10	.10½
240 vis., 5 color, 25-30 cold test	.09½	.10	.09½	.10	.09½	.10
280 vis., 3 color, 25-30 cold test	.12¼	.12¾	.12¼	.12¾	.12¼	.12¾
280 vis., 4 color, 25-30 cold test	.11¼	.11¾	.11¼	.11¾	.11¼	.11¾
280 vis., 5 color, 25-30 cold test	.10¾	.11½	.10¾	.11½	.10¾	.11½
Cylinder Stocks:						
600, steam refined, light green	.04	.05½	.04	.05½	.04	.05½
600, steam refined, dark green	.02½	.03	.02½	.03	.02½	.03
190-200 vis., D color, Bright Stocks	.17		.17		.17	
150-160 vis., D color, Bright Stocks 0-10 c.t.	.12½	.14	.12½	.14	.13	.14
150-160 vis., D color, Bright Stocks 10-25 c.t.	.12½	.13	.12½	.13	.12½	.13
150-160 vis., D color, Bright Stocks 25-40 c.t.	.12¼	.13	.12¼	.13	.12¾	.13
150-160 vis., E color, Bright Stocks	.12	.12½	.12	.12½	.12	.12½
Waxes:						
124-126 White Crude Scale Wax	.01¾	.02	.01¾	.02	.01¾	.02

All bright stock prices are for domestic movement.

PENNSYLVANIA—						
34 Neutral	.05½		.05½		.05½	
34 Sundebloom	.05		.05		.05	
36 Miners' Neutral	.05½		.05½		.05½	
150, 3 color	.15¼	.15½	.15¼	.15½	.15½	
180, 3 color	.18	.18½	.18	.18½	.18	.19
200, 3 color	.21		.21		.21	
220, 3 color	.23¼	.26½	.23¼	.26½	.23	.26½
600, steam refined	.07½	.08	.07½	.08	.07½	.08
650, steam refined	.10	.11	.10	.11	.10¾	.11¼
600, Pennsylvania Flash	.11½	.12½	.11½	.12½	.11½	.12½
600, E filtered	.11	.12	.11	.12	.11	.12
600, D filtered, Oil City	.16		.16		.15	.16
Pennsylvania Bright Stocks below 35 c.t.	.16¼	.16½	.16¼	.16½	.16¼	.16½
Pennsylvania Bright Stocks above 35 c.t.	.16		.16		.16	
*122-124 White Crude Scale Wax	.02		.02		.02	
124-126 White Crude Scale Wax	.02		.02		.02	

*At New York.

GULF COAST (South Texas)—						
100 vis., 2-2½ color, pale oil	.05½		.05½		.05½	
200 vis., 3 color, pale oil	.07½	.07¾	.07½	.07¾	.07½	.07¾
300 vis., 3 color, pale oil	.08¾	.09	.08¾	.09	.08¾	.09
500 vis., 3½ color, pale oil	.10	.10½	.10	.10½	.10	.10½
750 vis., 3½ color, pale oil	.11½	.12	.11½	.12	.11½	.12
1,200 vis., 3½ color, pale oil	.14	.14½	.14	.14½	.14	.14½
2,000 vis., 4 color, pale oil	.15	.15½	.15	.15½	.15	.15½
200 vis., 5-6 color, red oil	.06¾	.07	.06¾	.07	.06¾	.07
300 vis., 5-6 color, red oil	.08	.08½	.08	.08½	.08	.08½
500 vis., 5-6 color, red oil	.09¼	.09¾	.09¼	.09¾	.09¼	.09¾
1,200 vis., 5-6 color, red oil	.13	.13½	.13	.13½	.13	.13½
2,000 vis., 6 plus color	.15	.15½	.15	.15½	.15	.15½

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

CALIFORNIA—						
130 vis., 2½-3 color	.08	.08½	.08	.08½	.08	.08½
200 vis., 2½-3 color	.09	.10	.09	.10	.09	.10
300 vis., 3-3½ color	.10	.11	.10	.11	.10	.11
350 vis., 3½-4 color	.11	.12	.11	.12	.11	.12
400 vs., 3½-4 color	.12	.12½	.12	.12½	.12	.12½
Red Neutral:						
200 vis., 4½-5 color	.09½	.10	.09½	.10	.09½	.10
300 vis., 5-6 color	.10¼	.10¾	.10¼	.10¾	.10¼	.10¾
400 vis., 5-6 color	.11	.12	.11	.12	.11	.12
500 vis., 4½-5 color	.12¼	.13	.12¼	.13	.12¼	.13
500 vis., 5-6½ color	.12		.12		.12	
600 vis., 6½ plus color	.13	.14	.13	.14	.13	.14
700 vis., 6½ plus color	.14	.15	.14	.15	.14	.15

Note—Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES

	June 30		June 23		June 16	
Gasoline, U. S. Motor, 58-60, 437 e.p.	.05½	.05¾	.05½	.06¼	.05½	.06¾
Kerosene, water white, 41-43	.04¾		.04¾	.05	.05¼	.05½
*Fuel Oil, Bunker "C," 41-43	.85		.85		.85	
†Fuel Oil, Diesel, 28-30, per bbl.	1.55		1.55		1.55	
Gas Oil, 28 gravity plus	.04		.04		.04	
25 pale Paraffin Oil, tank car	.10¼		.10¼		.10¼	
28 pale Paraffin Oil, tank car	.07¼		.07¼		.07¼	
280 red Paraffin Oil, tank car	.12½		.12½		.12½	
250 red Paraffin Oil, tank car	.11½		.11½		.11½	
225 red Paraffin Oil, tank car	.10		.10		.10	
200 red Paraffin Oil, tank car	.09¼		.09¼		.09¼	
Domestic heating oil, min. 32 grav., tank car	.04		.04		.04	
Refined Wax:						
120-122 a.m.p., per lb.	.02⅞		.02⅞		.02⅞	
125-127 a.m.p., per lb.	.03⅛		.03⅛		.03⅛	
130-132 a.m.p., per lb.	.03⅞		.03⅞		.03⅞	
133-135 a.m.p., per lb.	.04		.04		.04	
135-137 a.m.p., per lb.	.04½		.04½		.04½	
Petrolatum in barrels in carload lots, per pound:						
Dark Green	.01⅝		.01⅝		.01¾	
Amber	.02⅝		.02⅝		.03	
Extra Amber	.02⅞		.02⅞		.03¼	
Cream	.05⅝		.05⅝		.06	
Lily White	.06½		.06½		.06¾	
Snow White	.07		.07		.08	

*Lighterage 5 cents a barrel extra. †Lighterage 6.5 cents a barrel.

NEW YORK (BAYONNE) EXPORT PRICES

	June 30		June 23		June 16	
600, steam refined cylinder stocks, in bbls.	.15½	.16	.15¾	.16	.15¾	.16
635, steam refined	.16¼	.16½	.16¼	.16½	.16¼	.16½
650, steam refined	.18¾	.19	.18¾	.19	.18¾	.19
600 Pennsylvania Flash	.19½	.20	.19½	.20	.19½	.20
630, Pennsylvania Flash	.25¾	.26	.25¾	.26	.25¾	.26
600, Warren E	.19	.20	.19	.20	.19	.20
600, Oil City E	.18	.18½	.18	.18½	.18	.18½
Light 140-150 Bright Stocks	.24¼	.24½	.25	.26	.25	.26
Dark 140-150 Bright Stocks	.23½	.24	.24	.25	.24	.25

LOS ANGELES EXPORT PRICES

	June 30		June 23		June 16	
Kerosene, water white	.04½	.06	.04½	.06	.04	.04½
*U. S. Motor gasoline, 53-55, 437 e.p.	.05	.06½	.05	.06½	.03½	.04
*58-60, 400 endpoint gasoline	.05½	.06½	.05½	.06½	.03½	.04¼

*For coastwise shipment.

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

East Texas (June 20).....$ .20
Rusk County, Tex. (April 4, 1931)*..... .35
Corsicana heavy (June 3, 1931)†..... .32
Other fields.....See gravity table

*Posted by Panola Pipe Line Co. Magnolia Petroleum Co., June 20; Gulf Production Co., June 24; Sinclair Refining Co., June 24; Stanolind Oil & Gas Co., June 25.

TEXAS PANHANDLE

Gray County, Wheeler County and Carson-Hutchinson Counties..See gravity table

WEST TEXAS

Iatan and Westbrook..Same as North Texas
Crane, Upton, Crockett, Howard, Glasscock, Ector, Winkler and Pecos Counties*.....$ .35
Lea County, N. Mex.†..... .35

*The Texas Company, June 2, 1931. All other companies, June 3, 1931. †The Texas Company, June 2, 1931. All other companies, June 3, 1931.

GULF COAST

Grade A and Grade B classifications discontinued.....See gravity table
Jennings, La. (June 3, 1931)*.....$ .40
Lockport, La. (June 3, 1931)†.....
.....See Gulf Coast gravity table
Refugio light.....See gravity table
Refugio heavy‡..... .44
Markham (June 3, 1931)‖..... .37
High Island (June 3, 1931)¶..... .40

*Gulf Refining Co. †Vacuum Oil Co. ‡Humble Oil & Refining Co. ¶The Texas Company. §Gulf Pipe Line Co.

EASTERN STATES
Joseph Seep Purchasing Agency
(Effective June 3, 1931)

Penna Grade Oil in National Transit Lines (Pennsylvania).....$1.50
Pennsylvania Grade Oil in Southwest Pennsylvania Lines..... 1.35
Penna Grade Oil in Eureka Pipe Line Lines (West Virginia)..... 1.35
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio)..... 1.00
Corning Grade Oil in Buckeye Pipe Line Co.'s Line..... .65
Ragland Grade Oil in Cumberland Pipe Lines (Kentucky) (Jan. 10, 1931).... .60
Wayne District Oil in Cumberland Pipe Lines (April 23, 1931)..... 1.17

ARKANSAS

Smackover, Ark. (all grades) (June 2, 1931)*.....$ .37
Smackover, Ark. (all grades) (June 3, 1931)†..... .26
Bellevue, La. (June 3, 1931)..... .26
Urania (June 3, 1931)..... .30
Calion, Ark., heavy (June 3, 1931).... .37
East El Dorado, Ark. (June 3, 1931)... .35
Stephens, Ark. (June 3, 1931)..... .30
Other fields.....See gravity table

*Posted by The Texas Company on June 2, 1931, and by Gulf Refining Co. on June 3. †Posted by Standard Oil Co. of Louisiana and Magnolia Petroleum Co. on June 3. Bellevue posted by Standard Oil Co. of Louisiana and Magnolia Petroleum Co.; Urania by Louisiana Oil Refining Co. Calion by Gulf Refining Co.; East El Dorado by Gulf Refining Co. and Magnolia Petroleum Co. Stephens posted by Louisiana Oil Refining Co. and Atlantic Oil Producing Co.

SOUTH CENTRAL AND SOUTHWEST TEXAS

Darst Creek (June 2, 1931)*.....$ .37
Luling (June 3, 1931)†..... .35
Mirando (June 3, 1931)‡..... .44
Pettus (June 3, 1931)‡..... .50
Salt Flat (June 3, 1931)‡..... .37
Thrall§..... ..
Lytton Springs (Lockhart) See gravity table

(Continued on Page 110)

CRUDE OIL GRAVITY TABLE

	Okla., Kans., North and Central Texas, East Central Texas 1	N. La.-Ark. 2	Carson and Hutchinson Counties, Tex. 3	Gray County, Texas 4	Salt Creek, Wyo. 5	Gulf Coast 6
Below 25 degrees	...	...	...	...	...	.44
25 to 25.9	...	...	...	...	...	.45
26 to 26.9	...	...	...	...	...	.46
27 to 27.9	...	...	...	...	...	.47
28 to 28.9	...	...	...	...	...	.48
Below 29	.25	.25	...	...	...	...
29 to 29.9	.26	.26	...	...	.26	.49
30 to 30.9	.27	.27	...	...	.27	.50
31 to 31.9	.28	.28	...	...	.28	.51
32 to 32.9	.29	.29	...	...	.29	.52
33 to 33.9	.30	.30	...	...	.30	.53
34 to 34.9	.31	.31	...	...	.31	.54
Below 35	...	...	.21	.24	...	...
35 to 35.9	.32	.32	.22	.25	.32	.55
36 to 36.9	.33	.33	.23	.26	.33	.56
37 to 37.9	.34	.34	.24	.27	.34	.57
38 to 38.9	.35	.35	.25	.28	.34	.58
39 to 39.9	.36	.36	.26	.29	.34	.59
40 and over	.37	.37	.27	.30	.34	.60

Note—On June 20, the Magnolia Petroleum Co. gave notice that effective at 7 a.m. on that day and until further notice, its prices on crude oil in the States of Oklahoma, Kansas, Texas, Louisiana and Arkansas, where it had been purchasing on a gravity basis, would be as follows per barrel at the well: North and Central Texas, including Burkburnett, Archer, Stephens, Henrietta, Electra, Comanche and Olden, 35 cents; East Texas, 20 cents; Thrall, 25 cents; East Central Texas, including Mexia, Wortham, Corsicana light, 34 cents; Panola County and Lytton Springs, 34 cents; Gray County, Texas Panhandle, 30 cents and Carson and Hutchinson Counties, Texas Panhandle, 26 cents; Oklahoma: Cushing, Yale, Oklahoma City, Morrison, Wewoka and Seminole, 36 cents; Cement, Duncan and Walters, 32 cents; Hewitt and Graham, 28 cents; Healdton, 25 cents. Kansas: Augusta, 30 cents. North Louisiana: Bull Bayou, 36 cents; Haynesville, 27 cents; Pine Island, 32 cents; Cotton Valley, 25 cents. Arkansas: El Dorado and Rainbow, 25 cents.

Column 1—Stanolind Crude Oil Purchasing Co., H. F. Wilcox Oil & Gas Co., Sinclair Refining Co., Barnsdall Refineries, Inc., Mid-Continent Petroleum Corp., Champlin Refining Co., Mid-Kansas Oil & Gas Co., Eason Oil Co., Standard Oil Co. of Kansas, Continental Oil Co., Pure Oil Co., Tidal Oil Co., Tidal Western Oil Co. and Empire Pipe Line Co., all on June 1. Magnolia Petroleum Co. on June 2, with the exception that Magnolia posted below 26 degrees at 22 cents; 26-26.9 at 23 cents; 27-27.9, 24 cents. The Empire Pipe Line Co. adopted the Magnolia's schedule on lower grades in Carter County, Oklahoma. The Texas Company adopted Stanolind schedule on June 2, Gypsy Oil Co., June 3; Gulf Pipe Line Co., June 3; and Humble Oil & Refining Co., June 3.

Column 2—The Texas Company, June 2; Standard Oil Co., Magnolia Petroleum Co. and Gulf Refining Co., June 3.

Column 3—The Texas Company, June 2, 1931; Humble Oil & Refining Co., Gulf Pipe Line Co., Continental Oil Co. and Magnolia Petroleum Co., June 3.

Column 4—The Texas Company, June 2; Humble Oil & Refining Co., Gulf Pipe Line Co., Magnolia Petroleum Co., and H. F. Wilcox Oil & Gas Co., June 3.

Column 5—Midwest Refining Co., June 1.

Column 6—Posted by The Texas Company, June 2; Gulf Pipe Line Co., Humble Oil & Refining Co., Vacuum Oil Co. Sun Oil Co. posted same prices on June 3 up to and including 35 gravity at 55 cents, but will pay only 55 cents for all oil above 35 gravity.

CALIFORNIA CRUDE OIL PRICES

STANDARD OIL CO. OF CALIFORNIA

For its current purchases of crude oil at the well (unless otherwise specified) for allowable crude oil produced in accordance with allocations made by the California Statewide Curtailment Committee. All gravities above those quoted take highest price offered in that field. Effective June 19, 1931, at 7 a. m.

Gravity	Signal Hill	Seal Beach, Alamitos Heights	Huntington Beach	Inglewood	Olinda-Brea Canon	Torrance	Richfield	Coyote Hills	Santa Fe Springs	Midway-Sunset Elk Hills, Buena Vista Hills	Lost Hills
14-14.9	$.65	$.65	$.65	$.65	$.65	$.65	$.65	$.65	...	$.55	$.55
15-15.9	.65	.65	.65	.65	.65	.65	.65	.65	...	.55	.55
16-16.9	.65	.65	.65	.65	.65	.65	.65	.65	...	.55	.55
17-17.9	.65	.65	.65	.65	.65	.65	.65	.65	...	.55	.55
18-18.9	.65	.65	.65	.65	.65	.65	.65	.65	...	.55	.55
19-19.9	.65	.65	.65	.65	.65	.65	.65	.65	...	.55	.55
20-20.9	.65	.65	.65	.66	.66	.65	.65	.65	...	.55	.55
21-21.9	.65	.65	.65	.68	.67	.65	.66	.65	...	.55	.57
22-22.9	.65	.65	.66	.70	.68	.66	.68	.65	...	.56	.59
23-23.9	.67	.67	.68	.72	.70	.67	.70	.66	...	.58	.60
24-24.9	.69	.69	.70	.74	.72	.68	.72	.67	$.65	.61	.62
25-25.9	.71	.71	.72	.76	.74	.70	.74	.69	.65	.64	.64
26-26.9	.73	.73	.74	...	.76	...	...	.71	.65	.66	.66
27-27.9	.75	.75	.76	...	.78	...	...	.73	.68	.68	.67
28-28.9	.77	...	...	.80	...	...	...	.75	.71	.71	.69
29-29.9	.79	...	...	...	...	...	...	.77	.73	.74	.71
30-30.9	.81	...	...	...	...	...	...	.79	.75	.76	.72
31-31.9	...	...	...	...	...	...	...	...	.78	...	...
32-32.9	...	...	...	...	...	...	...	...	.80	...	...
33-33.9	...	...	...	...	...	...	...	...	.82	...	...
34-34.9	...	...	...	...	...	...	...	...	.85	...	...
35-35.9	...	...	...	...	...	...	...	...	.87	...	...

Standard Oil Co. of California prices in other fields:
Wheeler Ridge—55 cents per barrel for all grades (14° to 25.9°).
Coalinga—55 cents for all grades from 14° to 34.24.9°; 57 cents for 35 gravity.
Newhall, McKittrick and Kern River—55 cents for all grades (14° to 19.9°).
Montebello—65 cents for all grades (14° to 25.9°).
Whittier and LaHabra—65 cents for all grades (14° to 22.9°).
Elwood Terrace, f.o.b. ship—32° to 33.9°, 79 cents; 34° to 34.9°, 81 cents; 35° to 35.9°, 84 cents; 36° and above, 87 cents.
Playa Del Rey: Prices subject to field gathering charge of 5 cents per barrel—19° to 19.9°, 65 cents; 20° to 20.9°, 65 cents; 21° to 21.9°, 66 cents; 22° to 22.9°, 67 cents; 23° to 23.9°, 68 cents; 24° to 24.9°, 67 cents; 25° and above, 68 cents.

ASSOCIATED OIL CO. PRICES

Associated Oil Co. prices, effective June 20, are as follows:
Ventura Avenue, 22 gravity, 58 cents, with 2 cents added for each degree upward to and including 30 gravity, which is 74 cents.
Kettleman Hills, 30 gravity and above, 66 cents.
Potrero, 24 gravity, 69 cents, with 2 cents added for each degree upward to 34 gravity, which is 69 cents.

(Continued on Page 118)

TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns June 30

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Chicago	14.0	14.0	3.0	9.0
Decatur, Ill.	14.4	14.4	3.0	9.0
E. St. Louis	13.7	13.7	3.0	8.2
Joliet	14.4	14.4	3.0	9.0
Peoria	14.4	14.4	3.0	9.0
Quincy	14.2	14.2	3.0	8.8
Davenport, Ia.	14.5	14.5	3.0	9.3
Des Moines	14.5	14.5	3.0	9.3
Keokuk	14.5	14.5	3.0	9.3
Sioux City	14.1	14.1	3.0	8.9
Duluth, Minn.	15.5	15.5	3.0	9.9
Mankato	15.1	15.1	3.0	9.7
Minneapolis	15.2	15.2	3.0	9.9
La Crosse, Wis.	16.2	16.2	4.0	10.0
Milwaukee	15.1	15.1	4.0	8.9
Madison	15.3	15.3	4.0	9.1
Detroit, Mich.	14.8	14.8	3.0	10.7
Grand Rapids	14.7	14.7	3.0	10.6
Saginaw	14.9	14.9	3.0	10.8
Evansville, Ind.	15.1	15.1	4.0	9.9
Indianapolis	15.3	15.3	4.0	10.1
South Bend	15.4	15.4	4.0	10.2
Fargo, N. D.	16.9	16.9	3.0	11.9
Huron, S. D.	16.3	16.3	4.0	10.7
Sioux Falls	15.8	15.8	4.0	10.4
K. C., Mo.	13.9	13.9	3.0	7.6
Springfield*	13.9	13.9	3.0	8.5
St. Louis*	12.9	12.9	3.5	5.2
St. Joseph	13.5	13.5	3.0	7.5
Wichita, Kans.	12.8	12.8	3.0	7.8
Bartlesville, Okla.	13.0	16.0	5.0	7.5

*State tax 2 cents, remainder city tax.

A third grade of gasoline, "Stanolind Blue," is sold at all major points at a price 3 cents or more below the price on the regular grade.

Effective April 15—Discounts on Q.D.A. on 1,000 gallons or more per month throughout territory: Red Crown Ethyl Gasoline, 3 cents off tank wagon price; Red Crown gasoline, 2½ cents off tank wagon price; Stanolind Blue gasoline, 1 cent off tank wagon price.

Discount in Chicago division on 1,000 gallons or more per month: Red Crown Ethyl Gasoline, 4 cents off tank wagon price; Red Crown gasoline, 3½ cents off tank wagon price; Stanolind Blue gasoline, 3 cents off tank wagon price.

Discounts on resellers authorized agent's agreement: Same amounts as above except made off service station price instead of tank wagon price.

PACIFIC COAST TERRITORY

	Gasoline			Kero.
	Wh'le's price	Retail* price	Incl'ds tax of	tank wagon
Fresno	19.5	16.5	3.0	17.0
San Francisco	19.5	16.5	3.0	15.5
Los Angeles	19.0	16.0	3.0	15.5
Reno, Nev.	23.5	20.5	4.0	19.0
Portland, Ore.	21.0	18.0	4.0	16.5
Seattle, Wash.	22.0	19.0	5.0	16.5
Tacoma	21.5	19.0	5.0	16.5
Spokane	23.5	18.5	5.0	20.5
Phoenix, Ariz.	14.0	16.0	5.0	20.0

Above prices are at company's plant or depots as company does not operate stations. A 4-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where the discount is 3 cents plus a 3-cent special temporary discount subject to withdrawal at any time.

*Retail prices posted by Standard Stations, Inc., a subsidiary.

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Dallas, Tex.	13.0	16.0	4.0	8.0
Fort Worth	12.0	14.0	4.0	8.0
Houston	12.0	16.0	4.0	11.0
San Antonio	14.0	18.0	4.0	10.0
El Paso	13.0	17.0	4.0	12.0
Texarkana	16.0	16.0	4.0	11.0
Muskogee, Okla.	12.0	15.0	5.0	8.0
Okla. City	11.0	13.0	5.0	7.0
Tulsa	11.0	13.0	5.0	8.0
Ft. Smith, Ark.	15.0	15.0	5.0	11.0
Little Rock	16.0	16.0	6.0	11.0

One-cent rebate made from posted station prices to cash purchasers in Louisiana, Arkansas and Tennessee.

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Omaha	12 9	12.9	4.0	9.25
McCook	16.0	17.75	4.0	10.75
Norfolk	15 75	16.75	4.0	9.75
N. Platte	16.75	17.75	4.0	10.50
Scottsbluff	16.0	16.0	4.0	10.25

Note—Dealers' discounts allowed as follows: Red Crown Ethyl, 3 cents off station price; Red Crown, 2½ cents off station price; third grade, 1 cent off station price.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atlanta, Ga.	16.0	18 0	6 0	12 5
Augusta	18.0	20 0	6 0	14.0
Macon	16 0	18 0	6.0	12 0
Savannah	16 0	18.0	6.0	12 0
Birm'ham, Ala.	14 0	16.0	5.0	13 0
Mobile	16 0	18 0	4.0	13 0
Montgomery	16.0	18.0	4.0	13.5
Clarks'le, Miss.	18 0	20 0	5.0	13 5
Jackson	16 0	18 0	5.0	11 5
Natchez	18.0	20 0	5.0	13 5
Gulfport	16 0	18 0	5.0	13.5
Vicksburg	16.0	16.0	5 0	11.5
Jack'ville, Fla.	17 0	18 0	6 0	12 0
Miami	18 0	20.0	6 0	13 0
Pensacola	19 0	20.0	6 0	13 0
Tampa	17 0	18 0	6.0	12.0
Lexington, Ky.	17 0	18 0	5.0	12 0
Covington	16 0	17.0	5 0	11.0
Louisville	16 0	17.0	5.0	11 0
Ashland	17 0	19.0	5.0	13 0
Paducah	17.0	18.0	5 0	11 0
Bowling Green	19 0	21.0	5.0	14.5
Corbin	18 0	19.0	5.0	15.0

A third grade, "Kyso Green," is sold at a price generally 2 cents below the price on the regular grade.

In addition to the state tax of 4 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and one-half cent on kerosene. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fourth cent on gasoline. To Pensacola, Montgomery, Birmingham and Mobile state taxes add 1-cent levy tax. To Gulfport state tax add privilege tax of 2 cents.

Effective April 2, price to dealers 2 cents under posted tank wagon price.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
N. Orleans, La.	15 5	16 5	6.0	12.0
Baton Rouge	14.5	15.5	5 0	12.0
Alexandria†	15 5	16 5	6.0	12.0
Lafayette*	15.5	16 5	6 0	12 0
Lake Charles*	15.5	16 5	6.0	12 0
Shreveport	14 5	15 5	5.0	12 0
Knoxville, Tenn.	17.0	18.0	5.0	13.5
Memphis	13 0	14.0	5.0	10 0
Chattanooga	16 5	17.5	5.0	12 0
Nashville	16 0	17.0	5.0	13.5
Bristol	17.5	18.5	5.0	14.0
Lt. Rock, Ark.	15.5	16.0	6.0	11.0

*Includes city tax of 1 cent. Louisiana kerosene prices include 1-cent state tax. New Orleans kerosene price also includes 1-cent city tax.

†Gasoline price at Alexandria includes 1-cent tax in parish of Rapides.

Two-cent discount off gasoline and kerosene tank wagon price to dealer and commercial accounts.

PENNSYLVANIA-DELAWARE AND PART OF NEW ENGLAND

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Pittsburgh, Pa.	*11.0	*13.0	...	12 0
Philadelphia	*11.0	*13.0	...	12 0
Scranton	*11.0	*13.0	...	12.0
Allentown	*11.0	*13.0	...	12.0
Altoona	*11.0	*13.0	...	12.0
Erie	*11.0	*13.0	...	12.0
Dover, Del.	14.0	16.0	3.0	12.0
Wilmington	14.0	16.0	3.0	12.0
Springf'd, Mass.	15.5	17.5	3.0	11.0
Fall River	15.0	17.0	3 0	11.0
Worcester	15.2	17.3	3.0	11 0
Boston	14.5	16.5	3.0	11.0
Providence, R.I.	13.7	15.7	2 0	10.0
Hartford, Conn.	14.5	16.5	2.0	10.0
New Haven	14.6	16.6	2.0	10.0

*Does not include tax of 2 cents in Pennsylvania. Pennsylvania tax is collected by the dealer and paid by him direct to the State. Atlantic Refining Co. recognizes a 2-cent per gallon discount on gasoline from its posted tank wagon markets on sales to dealers for purpose of resale. Atlantic Refining Co. also recognizes a maximum discount of 2 cents per gallon on gasoline to commercial accounts under contract for one year.

OHIO

Standard Oil Co. (Ohio)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Ohio points	15.0	16.0	4.0	*13.0

Dealers and commercial accounts 2 cents under tank wagon.

*Service station price 13.0 cents.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Albany, N. Y.	16 6	17 6	2.0	15 6
New York*	15 3	15 3	2.0	14.3
Buffalo	15 8	15.8	2 0	14 8
Rochester	16.0	16 0	2 0	14.8
Syracuse	16 8	16 8	2.0	14.8
Boston, Mass.	16.5	16 5	3 0	13.5
Augusta, Me.	18.3	18 3	4 0	14 3
Manch'tr, N. H.	18.4	18 4	4 0	14.0
Burlington, Vt.	19 3	19 3	4.0	15.3

*Prices in steel barrels.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atl'tic City,N.J.	13.7	15 7	3 0	10.5
Newark	12 7	14 7	3 0	9 5
Annapolis, Md.	15.2	16 2	4.0	10 0
Baltimore	14 4	15 4	4.0	8.5
Cumberland	16.2	17 2	4 0	11.0
Wash'gton, D.C.	12 9	13 9	2 0	9 7
Dan'ville, Va.	17 0	18.0	5 0	10.8
Norfolk	15.5	16.5	5 0	9 3
Petersburg	16.5	17.5	5 0	10 3
Richmond	15 9	16 9	5 0	9 7
Roanoke	17.2	18 2	5.0	11 0
Charles'n, W.Va.	15.7	16 7	4 0	10.5
Keyser	16.3	17.3	4.0	11.1
Parkersburg	14 4	15 4	4 0	9 2
Wheeling	15.6	16 6	4.0	10.4
Charlotte, N. C.	13.5	16 5	6 0	11 3
Hickory	18.3	19.3	6 0	11 6
Mt. Airy	18.7	19 7	6 0	11 5
Raleigh	18.4	19 4	6.0	11 2
Salisbury	18 7	19.7	6 0	11.5
Charleston, S.C.	16 5	17.5	6.0	9.3
Columbia	18.4	19.4	6.0	11.2

A 2-cent per gallon discount off the gasoline tank wagon price is offered to dealers, except in Washington, D. C., and in Maryland where discount is 3 cents.

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Denver, Colo.	14 0	17 0	4 0	13.5
Pueblo	14.0	17 0	4.0	13 0
Grand Junction	16 0	19.0	4.0	14.5
Casper, Wyo.	15 0	18 0	4 0	10.0
Cheyenne	16 0	19.0	4 0	11 5
Butte, Mont.	17.0	20 0	5.0	16 0
Billings	20.0	23 0	5 0	14.5
Great Falls	20 0	23.0	5 0	16 0
Helena	20 0	23 0	5 0	16.0
Salt Lake, Utah	15 5	18 5	4.0	16 0
Albu'que, N.M.*	17.0	21 0	6.0	14.0
Boise, Idaho	18.0	21.0	5 0	15 0
Twin Falls	15.0	....	5.0	18.0

*One-cent excise city tax.

NAPHTHA

	Tank wagon	Tank car
Oleum spirits	12.0	8.0
V.M.&P. naphtha	14 0	9.5
Cleaners' naphtha	16 2	11 0
Stanisol	16.2	11.0

Tank wagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

STANOLIND FURNACE OIL IN CHICAGO

All dumps of 50 gallons or more.....$0.07

Note—Outside Chicago furnace oils discount of 1 cent per gallon is given on deliveries of 100 to 349 gallons and 1¼ cents on deliveries of 350 gallons or more.

TANK WAGON CHANGES

Standard Oil Co. of New Jersey reduced the gasoline station price 2½ cents to 17.0 cents in Charlotte, N. C., June 15.

Standard Oil Co. of California reduced the gasoline retail price 1 cent to 20.5 cents in Reno, Nev., and advanced it one-half cent in Tacoma, Wash., June 22.

Standard Oil Co. (Kentucky) reduced the gasoline station price 2 cents to 16 cents in Vicksburg, Miss., May 2. On June 1 the tank wagon price was reduced to 16 cents in Macon, Ga. On June 5 the kerosene price was reduced to 12 cents in Macon, Ga. June 24 the tank wagon price was reduced to 14 cents and the station price to 16 cents in Birmingham, Ala. On the same date these prices were reduced to 16 and 18 cents in Mobile, Ala. On the same date the tank wagon price was reduced to 16 cents in Savannah, Ga.

Magnolia Petroleum Co. advanced the gasoline tank wagon and station prices 1 cent in Tulsa and Oklahoma City June 23.

CRUDE OIL PRICE CHANGES

Gulf Production Co. posted a 20-cent flat price for East Texas crude on June 24. The Sinclair Refining Co. did likewise on the same day. The Stanolind Oil & Gas Co. posted a 20-cent price in the same field on June 25, the latter being for royalty oil.

CRUDE OIL PRICES

(Continued from Page 109)

Dobrowolski (Oct. 25, 1930)‖ .....
Same as Mid-Continent gravity scale up to and including 38-38.9°
Somerset .....
Same as Mid-Continent gravity scale up to and including 38-38.9°

*The Texas Company. †Magnolia Petroleum Co. ‡Humble Oil & Refining Co. §Prices same as North Central Texas less 19½ cents per cwt. freight. ¶Grayburg Oil & Refining Co., Pioneer Oil & Refining Co. and Texas Petroleum Products Co. ‖Pioneer Oil & Refining Co.

ROCKY MOUNTAIN STATES

Ohio Oil Co.-Midwest Refining Co.

Iles (Mar. 7, 1931):
33 gravity and above ..... $ .72
Under 33 gravity ..... .50
Fort Collins (June 2, 1931) ..... .30
Florence (June 2, 1931) ..... .27
Wellington (June 2, 1931) ..... .25
Dutton Creek (Oct. 28, 1930) 1.01
Rock Creek, Wyo. (June 2, 1931) ..... .45
Frannie, light (June 3, 1931) ..... .35
Frannie, heavy (June 3, 1931) ..... .25
Salt Creek .....Mid-Continent gravity table
Big Muddy (June 2, 1931) ..... .40
Grass Creek, heavy (June 2, 1931) ..... .62
Grass Creek, light (June 3, 1931) ..... .62
Elk Basin (June 2, 1931) ..... .62
Lance Creek (June 2, 1931) ..... .75
Poison Spider (Mar. 5, 1931) ..... .70
Notches (Mar. 14, 1927) ..... .65
Hudson (June 2, 1931) ..... .65
Lander (Mar. 5, 1931) ..... .40
Rex Lake (Feb. 22, 1930) 1.10
Osage (Apr. 15, 1931) ..... .98
Lost Soldier (Mar. 5, 1931) ..... .55
Hamilton Dome (Mar. 14, 1927) ..... .85
Greybull (Oct. 28, 1930) 1.25
Torchlight (Oct. 28, 1930) 1.25
Cat Creek (June 3, 1931) ..... .60
Pondera, Mont. (June 3, 1931) ..... .75
Sunburst, Mont. (June 2, 1931) ..... .85
Hogback, N. Mex. (June 3, 1931) ..... .65
Artesia, N. Mex. (June 3, 1931) ..... .25
Lea County, N. Mex. (June 3, 1931) .. .25
Border, Mont. 1.55
Red Coulee, Alberta 1.55

Note—Salt Creek, Cat Creek, Dallas-Derby, Hudson, Greybull and Hogback posted by Midwest Refining Co. and the remainder by the Ohio Oil Co. Both companies posted Grass Creek light and Elk Basin. Lost Soldier posted by Producers & Refiners Corp. Artesia posted by Continental Oil Co. Border and Red Coulee posted by Imperial Refining Co. Ohio Oil Co. ceased posting Artesia on March 5, 1931. Lea County posted by Humble Oil & Refining Co. Fort Collins, Wellington, Orchard, Florence, Rattlesnake and Table Mesa by the Continental Oil Co. Osage posted by Arro Oil & Refining Co.

MIDDLE WESTERN STATES

Ohio Oil Co.
(Effective June 2, 1931)

Lima ..... $ .70
Wooster ..... .73
Illinois ..... .55
Indiana ..... .35
Princeton ..... .55
Plymouth .....Shut in
Western Kentucky ..... .50
Midland, Mich.* (June 1, 1931) ..... .52
Dundee, Mich.† .....
Same as Stanolind Crude Oil Purchasing Co.'s Mid-Continent gravity scale
Upper and Lower Traverse Sands, Mich.† .....Same as Mid-Continent gravity scale
Somerset, Ky. (June 5, 1931) ..... .55
Oil City, Ky. (June 6, 1931) ..... .50
Petrolia (Canada) (June 4, 1931)† 1.50
Oil Springs (Canada) (June 4, 1931)¶ .. 1.62
Alberta (Canada)‖:
50° and above (Mar. 1, 1931) 2.36
45 to 45.9° (Mar. 1, 1931) 1.87

*Posted by Pure Oil Co. †Posted by Standard of Indiana for boat shipment. ‡Posted by Stoll Refining Co. §Posted by Imperial Oil, Ltd. ‖Posted by Imperial Oil, Ltd. and Regal Oil & Refining Co. of Calgary. Somerset, Ky., crude purchased by Ashland Refining Co., Ashland, Ky., and delivered through Cumberland Pipe Line.

Tide Water Pipe Co.

Bradford district (June 3, 1931) $1.75
Allegany district (June 3, 1931) 1.75

Pure Oil Co.

Cabin Creek, W. Va. (June 3, 1931) ..$1.25
Kelly Creek, W. Va. (June 3, 1931) .. 1.25
Bradford Hollow, W. Va. (June 3, 1931) 1.25

MEXICAN CRUDE

Panuco* .....$ .44

*F.o.b. ship, based on May transactions and exclusive of taxes and bar dues.

Of Interest to Sales Departments

Explain Terms of Contract Between Spain and Russia

NEW YORK, June 29.—The contract closed between the Soviet Naphtha Syndicate and the Spanish Petroleum Monopoly for the three years' requirements of the latter, beginning July 1 next, provides that the fuel will be delivered at 18 per cent under prevailing prices in the United States Gulf market, according to Standard Oil Co. of New Jersey.

Commenting on the Spanish-Russian deal under the caption, "Soviet Economics," the "Lamp," official organ of the New Jersey company, says:

"An excellent idea of the effect of Russian competition in the world's oil markets may be gained from the contract reported to have been closed between the Soviet and the Spanish monopoly. Effective July 1, this contract is to run for three years, and covers a minimum of 250,000 tons per annum of gasoline. The price is to be adjusted on that prevailing in the Gulf market, less 18 per cent. On the day the contract came to light this would have meant a price equivalent to 3½ cents per gallon f.o.b. the Gulf.

"As is now well established by their dealings abroad, the Soviet authorities disregard the usual considerations of costs and values in order to build up foreign credits. They are not even limited by the amount of the commodity properly exportable. In the case of petroleum they are for the most part producing and selling oil from expropriated properties, the cost of which was borne by foreign capital before the revolution. To provide the oil sold below the lowest world markets, the government deprives its own populace of all but a small part of their normal requirements.

"In 1929 the average per capita consumption of gasoline in the United States was 3.14 bbls., or about 132 gallons per person. In Russia, the second largest producing country, the per capita consumption was one-hundredth of a barrel, or less than half a gallon per person. The Russian populace is deprived of a great natural resource to enable the U.S.S.R. to break down the price structure in markets already oversupplied with oil."

ORGANIZE ETHYL CORP. FOR FOREIGN COUNTRIES

The Ethyl Export Corp. has been formed as a Delaware corporation to take over the foreign business of the Ethyl Gasoline Corp. The latter company, which is owned jointly by the Standard Oil Co. of New Jersey and General Motors Corp., controls the distribution of Ethyl Gasoline.

The new corporation will devote its activities exclusively to the distribution of Ethyl Gasoline in foreign countries. This phase of the corporation's activities has grown rapidly during the past two years. E. W. Webb, president of the parent company, is also president of the subsidiary company. Headquarters are located at 135 East Forty-second Street, New York.

GASOLINE TAX CONFERENCE

The North American Gasoline Tax Conference will be held in Denver on September 9, 10 and 11. State officials in charge of gasoline tax collections from all states in the Union, several provinces in Canada and from Mexico are expected to be in attendance. James Duce, state oil inspector for Colorado, will appoint a committee to make arrangements for the handling of the convention and entertaining the delegates. The program will be completed in the next few weeks.

STANDARD FINDS CAR OWNERS AT LAST REVOLTING AGAINST TAXES

The Lamp*

At last that most patient of all beings, the tax payer, is beginning to revolt against the excessive burdens put upon him. For the first time since the institution of gasoline taxes there has developed continuous and vigorous opposition on the part of the motorists. Recent efforts to add still more to an already excessive tax provoked such an outcry in 10 states as to make passage of new legislation difficult. In four more states the opposition is so strong as to make defeat of proposed increases probable. The people of Florida particularly are incensed over a bill to raise the tax to 7 cents a gallon. A similar rate proposed in Alabama has aroused press and public. Arkansas found that with a tax of 6 cents a large part of her gasoline business has moved over to the State of Missouri.

The governor of Pennsylvania says that his State is losing $5,000,000 a year through the evasion of gasoline taxes even with the relatively moderate levy of 3 cents a gallon in force last year. Evasion in the 5 and 6-cent states has been much more general.

One of three things is sure to happen when a government attempts to collect an exorbitant tax. The people forego the use of the article (as in the case of American cigarettes in Italy and Germany), they switch to a less satisfactory substitute, or they cheat the government by paying no tax at all. The liquor bootlegger put into business by high excise taxes has children today in the much safer business of bootlegging gasoline. There is little temptation to defraud a state out of a moderate gasoline tax. But when that has been increased until it amounts to more than the market value of the article, the inducement becomes too strong to be resisted and to date no state has anything like adequate machinery to enforce payment.

Consider the State of Oklahoma, one of the three largest producers of oil in the Union. Oklahoma has been largely built by the oil business and certainly her citizens are as willing as any others to pay a fair tax on gasoline. Bootlegging is said to be rampant, with a large percentage of the consumption supplied by gasoline which pays no tax. At this writing, the refinery price there is 2½ cents a gallon or less. The tax is 5 cents a gallon. The temptation to evade such a heavy addition to the cost of the gasoline is obvious. Unscrupulous jobbers who fail to make a tax return, although they collect 5 cents a gallon from the retailer, can sell the gasoline at cost or less and make a big profit. Thousands of gallons daily are reported to be run into Oklahoma from North Texas under cover of darkness and turned over to retailers at a price equivalent only to the tax. Huge frauds are alleged under cover of the exemption clauses. One agent recently reported that he sold 901 gallons, of which all but one were entered as tax exempt. Some of those allowed tax-free gasoline sign for legitimate requirements, only to have the returns to the State marked up to cover a large quantity diverted to others liable for the tax.

Diminishing Returns

The law of diminishing returns is working. The state with a fair tax collects it on practically all of the gasoline sold within its borders. A state with an exorbitant tax collects only from the reputable, honest distributors.

It is not easy to understand the lack of organized opposition to the practice of dipping deeper into the motorist's pocket every time the politicians want to

(Continued on Page 118)

*Published by the Standard Oil Co. of New Jersey.

ANNOUNCE OLYMPIC GAMES

Associated Oil Co. announces Olympic games which will be held at Los Angeles in 1932. Signs installed at all Associated stations.

COMMISSION IS MAKING PROGRESS IN SURVEYS

By C. E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., June 27.—The United States Tariff Commission is making rapid progress in the gathering of additional information concerning prices of foreign oil imported into the United States in competition with domestic oil and will be ready to send its full report to Congress when it meets in December.

This work is being pursued along three lines of investigation.

The former report of the commission to Congress embraced the years 1927, 1928 and 1929 but the commission is now getting from the same companies similar data for 1930 so that in December four years will be covered in the report.

The first report was restricted to an investigation covering the United States and Venezuela or the Maracaibo Basin but in the current work other Central and South American countries are included.

"We have met with courteous co-operation from all of the oil producing companies in pursuing this work," said Commissioner John Lee Coulter.

"The third line of our investigation," said Mr. Coulter, "relates to the cost of refining and we have a group of accountants now in the field in the eastern area along the Atlantic Seaboard, and inland, in the Gulf area and in California. We are also receiving information on the cost of refining in the West Indies, and in South America.

"We have felt that Congress wishes this report at an early day and expect to have the report in form to transmit to Congress by December 1."

PENNSYLVANIA GRADE ASS'N. RETAINS BAKER

PITTSBURGH, Pa., June 26.—Newton D. Baker, secretary of war under Woodrow Wilson, has been retained as counsel for the Pennsylvania Grade Crude Oil Association in its efforts to prove certain major companies operating on a plan of selling gasoline and lubricants which is a restraint of trade.

At a meeting of the board of directors of the association here today it was decided to postpone the election of new officers. The board of directors include Forest D. Dorn, I. H. Shearer and E. C. Emery, Bradford; E. C. Breene, C. L. Suhr and S. Messer, Oil City; J. P. Flynn, Sistersville, W. Va.; E. M. Lyons, Philadelphia; H. D. Atha, Logan, Ohio; John A. Beck, Butler; Fred G. Clark, Cleveland; J. D. Dinsmoor, St. Mary's, W. Va.; D. M. Wilson, New York; John P. Herrick, Olean, N. Y.; David B. McCalmont, Franklin; D. J. Sweeney, Buffalo, N. Y., and John McCoy, Marietta, Ohio.

NEW OFFICE BUILDING

The Emblem Oil Co., marketing subsidiary of the United Refining Co., is building combination office building and service station at Warren, Pa., where the refinery of the United company is located. General offices of the company will be located in the building. Approximately $75,000 will be spent in the improvements.

HEAVY TANK CAR DEMAND

Due to the increased demand for tank cars all the tank car equipment of the North American Car Corp. is now in use, according to E. R. Brigham, president. Some outside cars are also being leased by the corporation.

Socony-Vacuum Corporation Admitted

New Stock Opens on New York Curb at 18. All Transactions in General Petroleum Under Old Terms Canceled

The Curb Exchange has admitted to dealings Socony-Vacuum Corp. new stock when, as and if issued. Opening sale was made at 18. As a result of changed merger terms and decision to rename the proposed new corporation, the curb authorities ordered that all transactions in General Petroleum, which was to have been the title under the old terms, be cancelled.

The basis for merging Vacuum Oil Co. and Standard Oil Co. of New York has been changed and now provides that stockholders of Vacuum Oil will receive 2½ shares of capital stock of the merged company for each share of their present stock; stockholders of Standard Oil Co. of New York will receive new certificates for their present number of shares. The original merger terms called for a 3-for-1 basis of exchange. The new merger contract will be submitted to stockholders for ratification at an early date.

It has also been decided that the name of the merged company will be Socony Vacuum Corp., instead of General Petroleum Corp., as originally planned.

Directors of both companies arrived at an agreement for the new exchange basis after carefully reviewing the situation. They concluded that the changed conditions since the original agreement was entered into necessitated a modification of the terms.

Standard Oil of Ohio

Howard G. Jones retired July 1 as vice president in charge of finance and as treasurer of Standard Oil Co. of Ohio. Mr. Jones, whose association with the company began 39 years ago as a messenger boy, frequently in the service of John D. Rockefeller, Sr., will continue as a director.

W. J. Semple, director of finance of the city of Cleveland from 1924 to 1928 and comptroller of Standard Oil Co. of Ohio since 1928, has been elected treasurer, which office he will fill in addition to that of comptroller.

Superior Oil

Superior Oil Corp. reports for quarter ended March 31, 1931, net loss of $577,622 after interest, depreciation, depletion, undeveloped leases expired and surrendered, loss on sale of capital assets and other adjustments.

Consolidated income account for quarter ended March 31, 1931, follows: Gross earnings, $382,675; operating expenses, etc., $125,108; general and administrative expenses, $42,770; taxes, 20,647; interest, $33,567; profit, $160,583; depreciation and depletion, $433,980; undeveloped leases expired and surrendered, $208,186; loss on sale of capital assets and other adjustments, $96,039; net loss, $577,622.

Sun Oil

Statement of Sun Oil Co. and subsidiaries as of May 31, 1931 (adjusted to give effect to the sale of three-year 5 per cent gold notes), shows total assets of $94,884,372 compared with $94,140,681 on December 31, 1930, and earned surplus, $10,905,780, against $10,605,255. Current assets were $24,876,142 and current liabilities $7,517,252 as compared with $26,073,171 and $10,157,097, respectively, on December 31, 1930.

Mexican Eagle Oil

Mexican Eagle Oil Co., Ltd., has declared dividends of 11.94 cents and 15.92 cents (U. S. currency) a share for the year 1930, on the ordinary and participating preference shares, respectively, both payable July 14 at Irving Trust Co. The dividends are the same as those the year previous, amounting to 6 per cent on the ordinary and 8 per cent on the participating preference shares, both of $4 (Mexican) par value.

Canadian Eagle Oil Co., Ltd., has declared dividends of 12 cents and 23.88 cents (U. S. currency) a share on the ordinary and participating preference shares, respectively, both payable June 29 at Irving Trust Co. The dividends are the same as those declared a year ago on the ordinary and participating preference shares, both of no-par value.

Both companies are controlled by Royal Dutch-Shell.

Mexican Seaboard Oil

Special meeting of stockholders of Mexican Seaboard Oil Co. has been called for July 29 for the purpose of approving change in the company to Seaboard Oil Co. of Delaware. At the annual meeting held on May 20 stockholders authorized changing the company's name to Seaboard Oil & Gas Co., but officials of the company have been informed that a company, with that name no longer in existence, was incorporated in Delaware in 1918. As some of the stock of this former company still is in the hands of the public, the committee on stock list of the New York Stock Exchange believes that confusion might result should the Mexican Seaboard Oil Co. adopt that name.

Consolidated Royalty Oil

Consolidated Royalty Oil has declared a quarterly dividend of 5 cents per share, payable July 25, 1931, to stockholders of record of July 15.

Cities Service

Cities Service Co. has declared the regular monthly dividends of 2½ cents and one-half of 1 per cent in common on the common, 50 cents on the preferred, 50 cents on the preference BB and 5 cents on the preference B stocks, all payable August 1 to stock of record July 15.

New Bradford Oil

New Bradford Oil Co. has omitted the quarterly dividend of 7 cents due at this time.

Prairie Pipe Line

The Wall Street Journal says that John D. Rockefeller, Jr., early this year still held a substantial amount of Prairie Pipe Line Co. stock, although not a controlling interest. Of the 4,050,000 shares of $25 par capital stock outstanding, 403,275 shares were in the Rockefeller name on January 31 this year, or a little less than 10 per cent. As of February 28 last year, 473,275 shares were in his name and on February 2, 1929, he held 476,775 shares.

In the name of Jesup & Lamont there were 244,955 shares registered as of January 31 this year, while on February 28, 1930, there were 172,420 shares and on February 2 of the year preceding 191,162 shares.

The majority holding in Prairie Pipe Line Co., however, is apparently with Bancamerica-Blair interests, whose representatives early in March were elected to the leading position on the directorate of the company. As of the end of last year the Petroleum Corp. of America, which was launched January 24, 1929, by a banking group headed by Blair & Co., Inc., as an oil investment corporation, with its principal initial investment in Prairie Oil & Gas Co. and Prairie Pipe Line Co. issues, held 555,600 shares of the latter company's stock. This stock had been acquired from the Rockefeller philanthropical institutions—the General Education Board, the Rockefeller Institute for Medical Research and the Laura Spelman Rockefeller Memorial.

The following tabulation shows the 20 leading stockholders of Prairie Pipe Line Co. and their share holdings on January 31, this year, in comparison with February 28, 1930, and February 2, 1929:

	Jan. 31, 1931	Feb. 28, 1930	Feb. 2, 1929
John D. Rockefeller, Jr.	403,275	473,275	476,775
Jesup & Lamont, 26 Broadway	244,955	172,420	191,162
T. P. Gill, c/o Bancamerica-Blair Corp.	110,000	110,000	110,000
C. L. Little, c/o Bancamerica-Blair Corp.	104,000	104,000	104,000
N. B. Ross, c/o Bancamerica-Blair Corp.	85,000	85,000	85,000
Northern Finance Corp., 14 Wall Street	82,500	82,500	.....
W. H. Patterson, c/o Bancamerica-Blair Corp.	79,000	79,000	79,250
W. M. Lowe, c/o Bancamerica-Blair Corp.	65,300	95,900	110,000
Kordula & Co., c/o Farmers Loan & Trust Co.	40,039	.....	.....
Estate of Henry H. Houston, c/o Real Estate Trust Co., Philadelphia	38,784	38,784	48,480
Morgan Davis & Co.	38,700	38,700	37,400
Yale University	32,577	32,427	.....
Harry Harkness Flagler	30,000	30,000	30,000
G. J. Henne, c/o Bancamerica-Blair Corp.	30,000	30,000	30,000
Mrs. Edith Hale Harkness	28,950	28,950	28,950
John Mooney, c/o Bancamerica-Blair Corp.	28,000	28,000	.....
O'Neill & Co., P. O. Box. 28, Wall Street Station	25,800	24,620	.....
F. Forace, c/o Bancamerica-Blair Corp.	24,006	.....	30,000
Lewis Cass Ledyard, etc., trustee of trust of Payne Whitney, deceased	23,700	.....	.....
Mrs. Kate M. Ladd	22,569	28,725	28,725
R. S. Rowe, c/o Bancamerica-Blair Corp.	.....	30,000	30,000
Edward S. Harkness	.....	165,000	195,190

Pan American Petroleum

Holders of Pan American Petroleum & Transport Co. 6 per cent sinking fund bonds due November 1, 1934, are being notified by the Chase National Bank as trustee that $442,000 principal amount of

(Continued on Page 119)

STANDARD OIL STOCKS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

(Complete record week ending June 20)

1931 High	1931 Low	Week ended June 20 Sales	Week ended June 20 High	Week ended June 20 Low	Close June 24	Stocks—		Outstanding capital	Par value	Div. rate	Last paid	1928 High	1928 Low	1929 High	1929 Low	1930 High	1930 Low
1	⅛	No sales.	..	..	..	Atlantic Lobos		499,448	N.P.	....	5-28-30	..	..	..	..	1	¼
12⅞	6¼	No sales.	..	..	..	Borne Scrymser		$1,000,000	$25	....	10-15-30	56⅛	44½	46½	25	25	11¼
51	40	100	45	45	..	Buckeye Pipe Line		$10,000,000	$50	$1Q	6-16-31	76	53	74½	55	69	39⅞
129½	101	100	116	116	..	Chesebrough Mfg.		$3,000,000	$25	$1Q‡	3-31-31	161	117	210	130	184⅞	104¼
3½	2	2,100	2¼	2⅛	2⅛	Creole Petroleum	(sh)	5,977,873	N.P.	....	.....	17½	9½	11¾	5⅝	7⅝	3
30	20⅝	No sales.	..	..	22¼	Cumberland Pipe Line		$1,500,000	$50	50cQ	6-16-31	114	67	75¾	40	65¾	20¼
31	24	50	28	28	..	Eureka Pipe Line		$5,000,000	$100	$1Q	5- 1-31	88	64½	70½	42	54¾	26
2⅞	1	No sales.	..	..	..	Galena Signal Oil		$16,000,000	$100	....	.....	13	4¼	6½	3	7	2½
72	49⅞	1,100	56½	55	64½	Humble Oil & Refining		$74,103,300	$25	50cQ	4- 1-31	114¾	59½	128	74⅛	119	57¼
18¼	9⅞	2,000	12⅛	11⅝	13¾	Imperial Oil of Canada (new)	(sh)	25,421,768	N.P.	12½cQ	6- 1-31	104	56¾	41	22	30	15
21¼	9⅛	100	11¾	11¾	10½	Indiana Pipe Line (new)		$3,000,000	$10	25cQ	5-16-31	91⅞	74⅜	41⅞	26	41	14½
15½	8¾	4,700	10½	10	11½	International Petroleum (new)	(sh)	14,247,088	N.P.	25cQ	6-16-31	55	35	30⅜	15	24	11⅜
17½	11¼	No sales.	..	..	13¾	National Transit		$6,362,500	$12.50	25cQ	6-16-31	32⅜	19⅜	25⅛	10⅛	22⅜	11½
14½	7⅞	100	8	8	9	New York Transit		$1,000,000	$10	25cQ	4-15-31	75	38½	17½	10	21⅜	10⅛
30	28	50	28½	28½	..	Northern Pipe Line		$2,000,000	$50	$28A	1- 2-31	69	56½	63	41	54	26¼
15½	8	100	10¼	10¼	..	Penn Mex Fuel		$10,000,000	$25	75c	6-24-31	84	28	44½	20	32	12
8	3¼	100	4¼	4¼	..	Solar Refining		$4,000,000	$25	....	12-20-29	..	..	50	29	33	4⅞
17	10	No sales.	..	..	..	Southern Pipe Line		$1,000,000	$10	50c	6- 1-31	19	15	22½	13	20⅞	8⅝
23⅞	12⅜	900	13½	13	14⅛	South Penn Oil		$30,000,000	$25	25cQ	3-31-31	71⅞	36¾	60¼	35⅛	45⅞	16⅛
36	33	No sales.	..	..	..	Southwest Pennsylvania Pipe Line		$1,750,000	$50	$1Q	7- 1-31	102	70	70	60	64	32
38½	19¼	20,800	25⅜	24⅛	27¼	Standard Oil of Indiana		$348,175,069	$25	50cQ	6-16-31	95⅞	70⅞	63	45	59⅞	30
23⅝	15⅝	2,100	18⅝	17⅝	19½	Standard Oil of Kentucky		$25,654,516	$10	40cQ	3-31-31	179¾	122¼	46⅞	29	40½	18⅝
36½	19¼	No sales.	..	..	..	Standard Oil of Nebraska		$4,649,225	$25	50cQ	3-20-31	54⅞	39⅞	50¼	40	48⅞	34⅝
62½	35	150	41	39¾	44¾	Standard Oil of Ohio		$14,000,000	$25	62½cQ	4- 1-31	134	71	129	60	108½	43¼
3½	2¾	No sales.	..	..	..	Swan-Finch Co.		$861,466	$25	....	1-15-29	23¼	16	18	10	10	4
69¾	22½	26,600	41⅝	35½	42¼	Vacuum Oil Co.		$126,180,350	$25	50cQ	3-20-31	111	72	133¾	75	97⅞	45⅝

*Ex-dividend. †Unit of trading less than 100 shares. ‡Plus 50 cents extra.

INDEPENDENT OILS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

(Complete record week ending June 20)

1931 High	1931 Low	Week ended June 20 Sales	Week ended June 20 High	Week ended June 20 Low	Close June 24	Stocks—		Outstanding capital	Par value	Div. rate	Last paid	1928 High	1928 Low	1929 High	1929 Low	1930 High	1930 Low
1¾	½	5,200	¾	⅝	1	American Maracaibo	(sh)	700,000	N.P.	....	.....	9½	3½	8⅝	1⅛	4½	½
16⅞	8½	No sales.	..	..	..	British American Oil Corp.		1,311,321	N.P.	20cQ	4- 1-31	55	32¾	62	7⅞	23	13⅜
2⅜	½	2,700	1⅛	⅞	1⅜	Carib Syndicate		$131,250	25c	....	.....	4½	3⅞	4⅞	1	2¾	⅝
20¾	9¾	76,000	11¾	10⅜	13⅛	Cities Service	(sh)	24,290,359	N.P.	30cA‡	6- 1-31	90⅞	54	68⅛	20	44¼	13
84⅜	61¼	800	62½	62¼	66⅜	Cities Service pfd.	(sh)	1,500,000	N.P.	50cM	6- 1-31	103¼	94½	98¾	84	93⅞	78¼
½	⅛	16,700	⅛	⅛	⅛	Colombia Syndicate		$2,000,000	$1	....	.....	3¼	.76	2	½	¾	⅛
2¾	1½	No sales.	..	..	..	Consolidated Royal		$5,527,875	$10	7½cQ	4-25-31	8⅞	6¼	11⅛	2½	5⅞	2
⅝	¼	No sales.	..	..	..	Crown Central		.....	....	....	.....	..	..	..	..	..	..
5	2	100	2⅝	2⅝	..	Darby Petroleum		1,019,392	N.P.	....	10-15-30	33½	3¼	26	6½	21¾	4¼
6	2½	600	3	2⅝	..	Derby Oil & Refining	(sh)	500,000	N.P.	....	.....	2¼	1	11	2	11	2
40⅛	26	No sales.	..	..	..	Derby Oil & Refining pfd.		48,500	N.P.	....	.....	21⅛	7½	44	20¾	60	30
75½	38	3,100	52¼	43½	59⅛	Gulf Oil Corp.	(sh)	4,504,921	$25	37½cQ	4- 1-31	165	101⅛	209	115	166⅞	58½
⅝	¼	17,400	⅜	¼	7/16	Intercontinental Petroleum		$5,682,000	$5	....	.....	3⅜	1	2⅞	⅜	1¾	⅜
1⅞	½	No sales.	..	..	..	Kirby Petroleum	(sh)	750,000	N.P.	....	.....	3	1¼	3⅝	1¼	3	⅞
1½	½	2,200	⅝	½	..	Leonard Oil & Development		$50,000,000	$25	....	.....	9⅜	5⅛	6⅛	1	4¾	½
6¾	3½	No sales.	..	..	4	Lion Oil & Refining	(sh)	250,000	N.P.	....	10-27-30	43⅞	20	38⅞	18	29	4⅞
25	14⅛	700	16½	16	18½	Lone Star Gas	(sh)	5,000,000	N.P.	22cQ	3-31-31	69⅛	48½	67⅞	28	55⅞	19⅝
½	⅛	1,800	¼	¼	¼	Magdalena Syndicate	(sh)	850,000	$1	....	.....	1⅞	½	1¼	½	½	⅛
5	3	100	4	4	..	Margay Oil Corp.		160,000	N.P.	....	7-10-30	48½	32	38½	14	16	3
4⅞	1½	300	2⅝	2½	..	Mexico-Ohio Oil Co.		500,000	N.P.	....	.....	8	2¾	6⅜	2¼	7½	1¾
½	¼	100	⅜	⅜	..	Mountain & Gulf		$4,000,000	$1	1cQ	4-15-31	1¾	.76	1½	¼	⅜	⅜
5⅞	3⅛	200	3⅛	3⅛	3⅞	Mountain Producers		$1,682,182	$10	25cQ	4- 1-31	28⅞	19½	22⅞	7	12⅛	3¾
1½	¾	600	⅞	¾	½	New Bradford Oil		$1,095,291	$5	7cQ	4-15-31	5⅝	4¼	5	2½	3½	1⅛
3	1¼	500	1⅜	1⅜	1¼	New Mexico and Arizona		$1,000,000	$1	....	.....	11⅞	7⅛	9⅜	2¼	7¼	1½
3¼	1⅛	No sales.	..	..	2	North Central Texas	(sh)	400,000	N.P.	....	9- 2-30	14¼	8½	18½	6⅛	11¼	2⅛
½	⅛	2,500	¼	⅛	1¼	Pandem	(sh)	489,875	N.P.	....	.....	6	2⅛	3½	½	2½	¼
2	⅝	400	⅝	¼	..	Pantapec Oil	(sh)	1,506,000	N.P.	....	.....	15⅝	8½	10½	1⅞	4⅜	⅞
1½	½	1,000	1	⅞	1⅛	Reiter-Foster	(sh)	388,584	N.P.	....	12- 2-29	12⅞	4⅛	8½	1⅛	5⅜	1
3	1¼	1,500	1¾	1¼	..	Ryan Consolidated	(sh)	500,000	N.P.	....	.....	12	4⅛	11	2	8⅝	2
1⅜	⅞	No sales.	..	..	..	Salt Creek Consolidated	(sh)	1,286,300	$10	7cQ	4- 1-31	7¼	5½	5⅞	1⅞	2½	½
7¾	4	600	4¾	4½	4⅞	Salt Creek Producers	(sh)	1,496,859	$10	35cQ	5- 1-31	35	23⅛	25⅞	9	15¼	5¼
5¼	1	8,200	1⅝	1	2⅛	Sunray Oil Corp.	(sh)	1,163,185	$5	5%Q§	4-15-31	..	..	12	5⅝	10	2
1⅞	⅝	1,200	¾	⅝	⅞	Venezuelan Petroleum	(sh)	755,090	$5	....	2-15-30	9⅛	4¾	6½	1¾	4½	⅜
3½	1½	No sales.	..	..	..	Woodley Petroleum		$500,000	$1	....	3-31-29	8¼	4⅞	9½	2	5	½
1¼	¼	400	¾	¾	..	Y Oil & Gas		100,000	N.P.	....	.....	8⅝	2⅛	2⅞	½	2½	⅜

*Ex-dividend. †Unit of trading less than 100 shares. ‡Payable monthly and monthly stock dividend of one-half per cent. §Paid in lieu of regular cash dividend of 2 per cent.

TRANSACTIONS IN OIL SHARES ON NEW YORK STOCK EXCHANGE

Quotations Compiled by Francis, Bro. & Co., Members of the New York Stock Exchange and Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

(Complete record week ending June 20)

1931 High	1931 Low	Week ended June 20 Sales	Week ended June 20 High	Week ended June 20 Low	Close June 24	Stocks—		Outstanding capital	Par value	Div. rate	Last paid	1928 High	1928 Low	1929 High	1929 Low	1930 High	1930 Low
23	15½	2,100	16½	15½	17½	Amerada Corp.	(sh)	922,075	N.P.	50cQ	4-30-31	43⅞	27⅛	42⅝	17½	31½	16½
12⅜	5	500	7	6	7⅞	American Republics Corp.	(sh)	209,180	N.P.	$3.50SA	12-10-30	85	51⅛	64¾	12½	37	5⅛
31	20	10	20½	20½	..	Associated Oil		$57,260,300	$25	50cQ	3-31-31	53⅜	37½	47¼	34½	51	30
23⅝	11⅛	9,600	15⅛	13¾	16⅞	Atlantic Refining		$66,763,775	$25	25cQ	6-16-31	66⅜	50	77⅞	30	51⅜	16⅝
14½	5¾	11,300	7⅜	6⅝	9½	Barnsdall Corp. A		$56,546,600	$25	25cQ	5-11-31	54	20	49⅛	20	34	8⅝
12	5	17,400	7⅞	6⅜	9⅛	Continental Oil of Delaware	(sh)	4,741,554	N.P.	....	.....	..	..	47⅞	18	30½	7¾
47	15¼	2,700	20⅞	19	23¼	General Asphalt	(sh)	413,333	N.P.	75cQ	6-16-31	94⅞	68	94¾	42¼	71½	22⅜
68½	27	2,500	37	33	43¾	Houston Oil		$24,968,600	$100	....	.....	167	79	109	26	116⅞	29¼
4⅝	2	300	2⅛	2⅛	2½	Indian Refining		$12,564,070	$10	....	.....	39⅝	9	53	13⅛	17	2
4½	2	900	2⅝	2½	..	Louisiana Oil Refining	(sh)	1,190,063	N.P.	....	.....	19¾	9⅜	18	7	12	3½
3¾	1	No sales	..	..	1¾	Maracaibo Oil	(sh)	330,000	N.P.	....	.....	25½	12½	18½	5⅛	10⅜	1⅜
20¾	10⅝	19,200	14⅞	13	16¼	Mexican Seaboard	(sh)	1,244,383	N.P.	....	10- 1-24	72	4⅝	50⅜	8¼	37	9¾
16¾	5¾	4,100	8¼	7½	9¾	Mid-Continent Petroleum	(sh)	1,857,912	N.P.	....	.....	44½	25⅛	39⅞	22⅛	32	11
19½	7	6,500	9¼	8⅝	10⅞	Ohio Oil	(sh)	6,648,052	N.P.	....	.....	84	58½	79⅞	64¼	32	16
35⅛	25	No sales.	..	..	..	Pan American P. & T.		$50,084,700	$50	....	12-20-27	50⅞	38¼	69	40½	46½	42
36½	24	100	28½	28½	..	Pan American P. & T. "B"		$121,110,650	$50	....	12-20-27	59⅞	37¾	69¼	40½	67¼	30
4¼	1½	500	1¾	1⅝	2⅜	Panhandle P. & R.	(sh)	199,370	N.P.	....	.....	21¾	11½	15¼	3	12¾	1⅜
20	10	No sales.	..	..	..	Panhandle P. & R. pfd.		$2,564,400	$100	....	.....	108	70	76	47½	20	47½
16⅝	4⅜	8,112	6⅞	6⅜	8⅝	Phillips Petroleum	(sh)	2,593,075	N.P.	....	1- 2-31	53⅞	35¼	47	24¼	44⅜	11½
1½	½	1,200	⅝	½	¾	Pierce Oil Corp.		$29,622,831	$25	....	.....	5¼	½	3⅜	1	2½	½
3⅜	1	800	1⅝	1⅜	2	Pierce Petroleum	(sh)	2,500,000	N.P.	10c	2-16-31	7	3½	5⅞	½	7⅛	1⅛
20⅜	6½	1,300	9½	9	10½	Prairie Oil & Gas		$60,848,000	$25	....	.....	68	46	65⅜	40½	54	11¼
26½	14⅝	2,800	18⅝	17	19⅝	Prairie Pipe Line		$101,250,000	$25	75cQ	3-31-31	280	172	65	45	60	16⅞
6	1⅞	100	3⅛	3⅛	3	Producers & Refiners		$37,438,950	$50	....	9-15-23	29⅞	16	25⅞	4	11⅞	1
16	6½	No sales.	..	..	..	Producers & Refiners pfd.		$2,845,350	$50	....	5- 4-25	49⅝	41	46⅜	25½	40	11½
11⅞	5½	3,400	6⅝	6⅛	8	Pure Oil		$75,959,250	$25	....	9- 1-30	31⅝	19	30¾	20	27¼	7⅝
6⅜	1	3,400	1⅝	1¼	1⅝	Richfield Oil (new)		$52,410,875	N.P.	....	.....	56	23	49⅝	20	9¾	4⅜
10¼	3½	6,700	4⅝	3⅞	5	Rio Grande Oil	(sh)	1,236,270	N.P.	....	7-25-30	37½	32	42½	15	25¾	5
42⅝	24⅞	8,800	27½	25½	30⅛	Royal Dutch, N. Y.	(sh)	611,303	....	$1.3404	1-30-31	64	44⅝	64	43⅛	56½	36⅞
34	19	No sales.	..	..	..	Shell Transport & Trading Co.		£23,985,000	£1	$0.966	1-23-31	47⅞	41⅜	51½	40⅝	48⅜	26
10¼	4½	12,600	6¼	5½	7¼	Shell Union Oil	(sh)	13,066,497	N.P.	....	6-30-30	39¼	23¼	31¾	19	25½	5¼
11	5	300	5¼	5	7¾	Simms Petroleum		$8,353,620	$10	....	9-15-30	27½	18⅛	40⅛	15	37	5⅝
15⅞	6¼	26,000	8½	7¾	10¼	Sinclair Consolidated	(sh)	5,500,000	N.P.	25cQ	4-15-31	46¾	17⅜	45	21	32	9¾
103	77	100	80	80	87	Sinclair Consolidated pfd.		$16,025,250	$100	$2Q	5-16-31	110	102½	111	103	112¼	86
12⅞	3⅛	300	4⅛	4	5½	Skelly Oil		$27,441,250	$25	....	12-15-30	42⅝	25	40½	28	12	10⅛
51¾	31⅛	42,600	37½	34	38⅛	Standard of California	(sh)	12,594,098	N.P.	62½cQ	6-16-31	80	63	81⅞	51½	75	42½
19	8¾	3,600	11½	10¼	13⅞	Standard of Kansas		$8,000,000	$25	....	3-16-31	37¾	15	33¾	18	49	14⅜
52½	30⅝	50,925	37	34¼	40⅛	Standard Oil of New Jersey		$634,999,200	$25	25cQ‡	6-16-31	59⅜	37¾	83	49	84⅞	32½
26	13⅞	64,600	16⅛	15⅛	18	Standard Oil of New York		$445,223,675	$25	40cQ	6-16-31	33¼	28¾	48⅛	31¾	40⅜	19⅜
45¼	31	800	33½	31¼	..	Sun Oil	(sh)	1,416,869	N.P.	25cQ	6-16-31	77	31½	68⅜	55	70	39
1⅜	¾	1,200	⅞	¾	⅞	Superior Oil Corp.	(sh)	776,979	N.P.	....	12-20-30	..	..	24	5¼	9⅜	¾
36¼	18	25,100	20⅝	19⅜	24½	The Texas Corporation		$246,204,900	$25	50cQ	4- 1-31	74¾	50	71⅞	50	60½	28¼
6½	2½	200	3½	3⅝	4⅝	Texas Pacific Coal & Oil Co.		$9,304,890	$10	....	12-31-29	26⅝	12⅛	23⅞	9½	14½	4
9	4¼	No sales.	..	..	..	Tide Water Oil	(sh)	2,191,759	N.P.	20cQ	3-31-31	41½	19⅝	40	14	31	13
83	54	No sales.	..	..	..	Tide Water Oil pfd.	(sh)	19,947,000	N.P.	$1.25Q	5-16-31	100⅛	86	97½	85⅛	94⅞	71
9	4	7,800	6⅛	5½	6⅜	Tide Water Associated	(sh)	5,560,424	N.P.	30cSA	2-16-31	25	14¾	23½	10	17¾	5⅞
68	38	700	43	40½	40	Tide Water Associated pfd.		$73,284,500	....	$1.50Q	4- 1-31	..	..	90⅞	74⅛	89¾	55
26⅝	14	15,808	19½	17⅜	19¾	Union Oil of California		$104,342,375	$25	50cQ	5- 9-31	58	42⅜	57	42⅛	50	10⅛
25⅛	20	600	20½	20¼	22	Union Tank Car	(sh)	1,254,048	$100	40cQ	6- 1-31	128¼	110	163¾	121⅞	38½	23
7⅜	1⅝	400	2½	2⅜	3⅜	Warner-Quinlan	(sh)	632,948	N.P.	....	7- 1-30	44⅞	26	42⅞	15	27	4¼
9⅝	3½	No sales.	..	..	5¾	Wilcox Oil & Gas	(sh)	428,907	N.P.	....	5-10-28	..	..	29¾	12⅞	21	6½

*Ex-dividend. †Unit of trading less than 100 shares. ‡Plus extra dividend of 25 cents.

In comparing highs and lows for the several years in the three tables, it will be necessary to take into consideration cases where there have been stock split-ups.

MORE STRENGTH SHOWN IN CHICAGO MARKETS

(Continued from Page 95)

cents down to 10 cents. While there are several lubricating oil "renovating" plants in Chicago, these are not the principal source of the cheap material.

Market postings on the best grades of fuel and gas oils slipped down another notch at the close of last week as the demand dwindled under depressed conditions in the industries. Although the refineries are shown to have further curtailed their operations, the statistical position of fuel and gas oil stocks was practically unchanged and greatly in excess of the current and prospective demand. Fuel oil can still be bought for 10 cents a barrel at the refinery in many localities. Prices on the best grades were as follows: 18-22 fuel oil, per barrel, 20 cents to 25 cents; 22-26 fuel oil, per barrel, 25 cents to 30 cents; 28-30 fuel oil, zero, per barrel, 42½ cents to 47½ cents; 32-36 gas oil, industrial, three-fourths cent to 1 cent; 32-36 zero gas oil, 1 cent to 1⅛ cents; 38-40 straw distillate, 1 cent to 1¼ cents.

EAST IS AROUSED BY REPORTS FROM RUSSIA

(Continued from Page 94)

ment of refined products in the local market during the week ending June 20, with contract shipments on the part of the large integrated companies constituting the bulk of the week's shipments.

The following table shows principal exports of refined petroleum products from New York for the past three weeks (all figures in gallons unless otherwise noted):

	Week ended		
	June 20	June 13	June 6
Gasoline	25,000	175,000	140,000
Naphtha	15,000	275,000	.....
Kerosene	40,000	95,000	270,000
Fuel oil	160,000	6,000	5,000
Lub. oil	1,340,000	785,000	1,775,000
Pet., refined	1,745,000	480,000	310,000
	Pounds		
Petrolatum	.....	20,000	.....
Paraffin wax	1,000,000	1,060,000	1,218,000
Refined	25,000	.....	115,000
Scale	150,000	240,000	220,000
Lub. grease	600,000	765,000	775,000

Export operators here are closely surveying the refined products situation preparatory to re-entering the market for stocks in substantial quantities. Considerable foreign business has accumulated, it is believed, with actual buying withheld pending some stabilization of the price basis for both crude oil and refined products.

The proration situation in East Texas is exerting an important influence on export activity locally, buyers being of the belief that a successful termination of the proration agitation in the new flush production areas of East Texas will result in an immediate stiffening in export prices, while continued unrestricted crude output in that territory will result in a further weakening of the price structure for principal refined products.

Imports

Imports of crude and refined petroleum at the principal United States ports for the week ended June 20 totaled 995,000 bbls., a daily average of 142,143 bbls., compared with 2,062,000 bbls., a daily average of 294,571 bbls. for the previous week and a daily average of 203,929 bbls. for the four weeks ended June 20. Comparative details follow:

(Barrels of 42 gallons)

At Atlantic Coast ports—	
Baltimore	61,000
Boston	70,000
New York	639,000
Philadelphia	168,000
Others	67,000
Total	995,000
Daily average	142,143
At Gulf Coast ports—	
All ports	None
At Atlantic and Gulf Coast ports—	
Total	995,000
Daily average	142,143
Daily average four weeks	203,929

Distribution of total imports is as follows:

Crude	667,000
Gasoline	61,000
Gas oil	63,000
Fuel oil	204,000

California Oil Receipts

Receipts of California crude and refined petroleum at Atlantic and Gulf Coast ports for the week ended June 20 totaled 173,000 bbls., a daily average of 24,714 bbls., compared with 179,000 bbls., a daily average of 25,571 bbls. for the previous week and a daily average of 33,286 bbls. for the four weeks ended June 20. Comparative details follow:

(Barrels of 42 gallons)

At Atlantic Coast ports—	
New York	173,000
Total	173,000
Daily average	24,714
At Gulf Coast ports—	
All ports	None
At Atlantic and Gulf Coast ports—	
Total	173,000
Daily average	24,714
Daily average four weeks	33,286

Distribution of total California oil receipts is as follows:

Gasoline	173,000

Charter Market

There was some falling off in tanker chartering transactions during the past week, with relatively few fixtures involving export shipments from the United States.

The tanker market continues weak, with record low prices still obtaining in many instances.

Fixtures reported during the week were as follows:

Steamer Irini (Grk.), 5,000 tons, clean, Constanza to Mediterranean, 6s., option Russian loading ports 6d. extra, August/September.

Motorship Knut Knudsen (Nor.), time charter 5s.9d., fuel oil from Curacao to South Georgia, thence to U.K./Continent with whale oil, delivery November, redelivery March.

Motorship Longwood (Br.), 6,000 tons part cargo, clean, North of Hatteras to U.K./Continent, 7s.6d., August loading.

Steamer Oiltrader (Br.), 3,261 net, clean, Gulf to French Atlantic ports, 9s., option North of Hatteras loading 8s., Constanza loading 6s.9d., Black Sea loading 7s., July 25/August 10 cancelling.

Motorship Stegg (Nor.), 3,548 net, clean, Black Sea to U.K./Continent, including Ireland, 7s., early July.

SUGGESTS PLAN FOR ORDERLY DEVELOPMENT

(Continued from Page 18)

the corrective sought to lead the industry out of the present wilderness of depression and overproduction.

If it is true that the consumption of crude oil in the United States is over 65 per cent of that of the entire world, and that our production at the present time is in excess of the balance of the world, and that we have materially less resources in sight than the rest of the world, then, from a patriotic standpoint, we are pursuing a short-sighted policy in dissipating our reserves which might be needed for national purposes in time of war.

Elimination of Smaller Units

Therefore, I do not think that a tariff would be the corrective or palliative that it is hoped it would be. Carried to its natural conclusion, the present status of the oil industry will mean the elimination of the smaller producers and smaller companies, and by this is meant not necessarily the less efficient because of smallness of size, and the abandonment of thousands of small wells and the creation and formation of larger country-wide, integrated units in the oil business. Therefore, the paramount necessity of the industry, as it stands today, is the finding of a solution that will protect the already large invested capital in the oil industry and particularly the small individual producer and the smaller companies and keep them from insolvency and protect their investments so that if they are absorbed it will not be at the great loss that is entailed in bankruptcy. No one can question how much better it would have been if a solution could have been worked out for the freeing of the slaves in the South which would not have involved the destruction of practically the entire capital wealth and productiveness of the southern states. It is of paramount and almost national importance that a solution be worked out which will protect the individual oil producer and smaller company, which in the aggregate, forms such a large proportion of the oil industry. I think that the gradual absorption of the smaller units in the oil business will prevail over a period of time but this absorption should be constructive and not destructive. If present conditions continue to prevail, it can be nothing but destructive.

It has been stated that in a business of any magnitude in which a large capital investment and assets are involved, that a known source of supply must be marked out—or a reserve. That is undoubtedly true of the oil business as well as of another vital national industry—the steel business; but the policies pursued in one cannot be applied to the other. Reserve of iron ore in the mine can be closely calculated, the ore can be mined and stored on the ground without any appreciable depreciation in quantity, quality or value; but this is not true of petroleum. Petroleum is migratory, volatile, hazardous and costly to handle and store and depreciates in volume and quality in storage. Therefore, the obtaining and storing of a reserve aboveground is an uneconomic procedure, and in the face of such irrefutable facts we have today the largest storage of petroleum and its products aboveground that has ever been known. There must, therefore, be something fundamentally wrong with the policies that have been pursued to date. It is not that the oil man is unintelligent, for, as a group, they are as intelligent, aggressive and versatile as any group engaged in any industry, as has been displayed by the technical and other improvements made in all branches of the oil industry. It has been stated that the individuality of the oil man is such that he could not co-operate but this has been disproved by the sacrifices made to date under present proration programs.

Priority Proposed

Another factor to be considered in the solution of the problems facing the oil industry is the varied interests of the royalty owners, oil producers, refiners and integrated units, each with its various financial and individual problems, but, in spite of such almost insurmountable difficulties, considerable co-operative unity has been achieved. But the business is today no better off, statistically or financially, than it was a year or two ago.

I, therefore, offer the suggestion that a policy known as "priority," in addition to unitization and conservation, be tried. By "priority" is meant the correction and regulation of the amount of crude oil received, handled and delivered to manufacturing units by pipe line companies. Under this plan an executive committee of the American Petroleum Institute, in which various branches of the industry and public could be afforded representation and hearing, would receive nominations and decide as to the amount of crude that would be necessary to be delivered to manufacturing units in order to meet the consumption requirements of that year; various factors such as consumption requirements of previous years and the forecast of business conditions for the ensuing year would in a large measure, control the decision of any such committee. That the major pipe line companies would then agree that they would not run oil in excess of the amount of their nominations, the total of which had been checked and approved by the committee; each pipe line company being allocated its portion of oil to be run, in ratio to the amount of crude oil run by them the previous year. In the face of the excessive amount of crude oil now in storage and readily available in proven fields, a policy or program thus rationally developed would be the proper and economic method of curtailment and would avoid adding to the already burdensome stocks of crude now held in storage. That all existing connections to those pipe lines would be run as at present without discrimination and in fields now being prorated additional oil would be taken—as needed to meet increased consumption—from leases already connected before any new connections would be made from discovery wells or fields.

Plan of Operation

That the amount of oil allotted to each pipe line company to be run during the coming year would be divided into a monthly average and only when the oil run for a month was below the allowable monthly average for such pipe line company, would that pipe line company be allowed to make a new connection. If there had been an excess in the previous month, this excess would have to be absorbed in the next month, and thus new connections extended by the pipe line company would be restricted and controlled by the actual requirements of consumption.

When the amount of oil handled for the month is under the allowable monthly average and the amount of total runs for the year is not in excess of that which should have been run to that date, a pipe line company may make a new connection. These connections to be made in order of priority. As a producing well was completed and logs filed with the various state commissions, they will be assigned a number by such commission in the order of their record and the producer will at that time elect by which pipe line company he wishes his oil run. And in the order of their completion, as taken from the records filed with the state commissions, the pipe line companies will accord the priority of their connections.

If a wildcat well, or a well some distance removed from existing pipe line facilities is so situated that it would not be a profitable investment for a pipe line company to lay to it, the owner of such a well, if he did not wish to lose his right of priority, would be compelled to post bonds so that the amortization of such line would be cared for in the event sufficient oil was not handled by the pipe line company, or waive his priority rights until such time as satisfactory arrangements could be completed with the pipe line company of his election.

If the various unitization and conservation programs were not effective, so that when a well was completed requiring the drilling of additional offsets to protect leaseholds and satisfy divergent royalty interests, a pipe line company connected to the original producer, in order of priority, when its monthly runs were under the allowable average so that such connection was permissible, would on request of the offset producers (on the completion of their wells) make connection to these offset wells, and oil would be run from all offsets, prorata, and no further connections would be made by the pipe line company on these leases only in order of priority and not until the pipe line company's monthly average permitted such further connections, and the connection of further wells on these leases would only be permitted in regular order of priority, as attested by the date of their completion reports. The offset producers, however, if they so desired on the completion of their wells, could elect to have some other pipe line company handle their oil but whatever company they elected could only make such connection in order of priority so that if wells in other areas or on other leases had been completed prior, the rights of these prior producers would not be abrogated.

Terms Suggested

In the event the operator who had completed his protection offset well to the original producer desired the pipe line company that had connected to the original producer to connect to his well, such connection would be made on the following terms: That on completion of the first offset well the amount of runs taken from the discovery well would be divided by two, thus reducing the discovery well's runs by 50 per cent and allowing the protection offset to run 50 per cent of the oil that the discovery well had previously been running; if a second protection offset was required the amount of oil that had been run by the discovery producer prior to the completion of the first protection offset would be divided by three and prorated equally between the original discovery and the

two protection offsets and if a third offset was required, due to lease obligations, the production would be prorated among the four wells on the daily average runs of the discovery well prior to the completion of any offsets. When one of the protection offsets, in the order of its priority, was entitled to a 100 per cent production run from the pipe line company of its election, whether it was the pipe line company connected to the original producer or another pipe line, an open flow capacity test of the original producer and of the well, which in the order of priority had been allowed capacity flow, would be taken, and the open flow test of these two wells would then be prorated among all other offset wells; and when a third well came on full production, in order of priority, the amount of allowable runs from the wells would thus be raised again by the addition of an open flow test of that date of all wells allowed full priority runs, and it would thus continue until all four wells (the original producer and the three offsets) had come into full priority capacity runs. In this way no discrimination would be practiced and the original discovery producer would receive discovery rights as to allowable runs prior to the completion of its offsets and at the same time undue drainage of offset leases would be avoided by a fair standard practice.

Of course, voluntary agreements instituted by individual or group producers, could be adopted so that the various wells might be prorated but no additional wells on any of these leases would be connected to the pipe lines, except in the order of their priority as attested by the completion records filed with the said commissions. If the producers on the offset leases to the original producer did not care to hook into the pipe line company which made the connection to the original well, they would await their turn in order of priority for the pipe line company of their election and if a delay was suffered, this would, of course, be their own individual responsibility.

Transfer of Connections

If a producer desired to transfer his connection from one pipe line company to another, the same could be transferred by mutual consent of the pipe line company and the producer, but a pipe line company taking on a new producer would consider such production as a new connection and such increase in runs would have to be taken into consideration and no new connections would be made further until the monthly average was again below the allowable monthly average for the year. Thus freedom in the interchange of connections would not be hampered and a producer could run his oil to whomsoever he elected.

It would seem that there should be no more objection to a voluntary agreement as to the amount of oil to be run during a coming year, in so far as it conflicted with laws pertaining to restraint of trade or monopoly, than would be caused by the voluntary and co-operative movements of conservation and proration now existing.

The logical place to stop or choke off production, if it cannot be retained in the ground, is at the outlet, or the pipe line. By a policy of this nature the proving of reserves would be restricted to the needs of the industry, as forecast for the coming year from the results of the previous year's operations.

If a flood of crude oil was not available and thus an excess of gasoline, the bearish effect and influence on retail sales would not be present and a fair price could be obtained for all petroleum products. And, as has been proven by the records during the past 10 years, would not mean an increased price to the consumer. A small producer would not be prorated on his old production, a fair price would be obtained by all for such oil as was produced and large companies operating their own pipe lines, that desired to utilize their own reserves, could only do so without penalizing their competitors and small connections and it would seem that such a policy would lead to the gradual absorption of the smaller producers and properties by the larger companies. Price cutting and the sale of petroleum and its products at uneconomic prices and the destruction of property rights is indeed a poor corrective; certainly the sale of fuel oil in competition with coal is sufficient evidence of the fallacy of such a policy.

Restraining Influence

This policy of priority should tend to exert a restraining influence upon excessive drilling and development, but a restraint that did not penalize those wells already on production. If a producer developed a property knowing that there were numerous wells in order of priority ahead of him before a connection would be available, it would naturally tend to delay the drilling of unnecessary wells, but for those companies that desired to develop their reserves, they could still do so and make them available in order of their priority for consumption. Leases that had to be drilled for protection could thus be drilled but the oil not thrown upon the market, and act as a depressing influence on the price, because such oil could only be run in its allotted order.

It is true that this policy would tend to favor larger units, that could afford to develop their properties and prove their reserves and await their turn in running the oil, whereas the small producer would be handicapped by having his capital tied up. But as there would be no penalizing of those producers who already had committed investments, there would be no depreciation of property values, the abandonment of which would be an economic crime.

It would seem, therefore, that this policy of "priority," in conjunction with the various conservation measures now in use, would be a logical method of assisting in ameliorating the present unsatisfactory condition prevailing in the oil industry.

GREED VS. PRORATION IN EAST TEXAS AREA

(Continued from Page 14)

whose owners have sold oil below the posted prices, are being produced to capacity while adjacent properties are entirely shut in because they have no market. Unequal withdrawals from adjacent properties accelerate the encroachment of bottom water with consequent waste and injury to both properties. Unrestricted flow wastes gas and diminishes total recovery. East Texas can probably force onto the market 500,000 bbls. or more of oil per day within the next 30 days at the cost of displacing some 300,000 bbls. from other fields which would be shut in or abandoned. It would probably receive for that volume of oil an average price of 15 cents, or less, per barrel. On this basis its gross income would still be less than the allowable production set by the railroad commission would bring at the posted price of the major purchasers.

The Problem of Connections

"It cannot be doubted that the failure of the purchasing companies to provide connections promptly for all operators who were willing to produce ratably created dissatisfaction which retarded proration efforts. Weeks after the proration order had been issued and after production had reached 250,000 bbls. daily, less than 40,000 bbls. daily were purchased ratably from properties other than those operated by the major purchasers themselves. Eighteen thousand barrels, or nearly one-half of the oil purchased ratably, went to a single purchaser, Humble Oil & Refining Co. Dozens of small operators, anxious to produce ratably, were unable to secure connections. Some of these, in desperation, entered into contracts and sold oil in amounts exceeding proration allowances.

"Of course, it is impossible to establish ratable purchases on a satisfactory basis, even if purchasing companies make every effort to do so, unless production also is fixed on a ratable basis. In the absence of an effective Railroad Commission order specifying ratable production from the various leaseholds, it is not surprising that the purchasers failed to provide adequate connections.

Law Without Teeth

"East Texas proration history has demonstrated to everyone the fact, long obvious to students of the situation, that the laws of Texas are not adequate to enforce proration on an unwilling operator. The law authorizes the Railroad Commission, as the conservation agency of the State, to prevent waste of oil and gas, among other minerals. The law also requires common purchasers to purchase ratably and without discrimination as between various producers and without unreasonable discrimination as between various fields. But economic waste is expressly excluded by the law from the consideration of the conservation authorities, and purchasers who do not qualify as 'common purchasers' under the law are free to purchase from one producer to the exclusion of any other producer. Only actual, physical waste, therefore, can be prevented under the law, and a large class of purchasers can ignore the ratable purchasing statute with impunity if they choose to do so.

"More serious, perhaps, and certainly more immediately effective in tying the hands of conservation officers, is the effect of the decision under the present law by which the producer, or the purchaser, who challenges the authority of the Railroad Commission to enforce its order against him, is relieved of all penalties and is left free to continue his infraction while his case is in court under review. Since the progress of any case through the higher courts upon appeal is necessarily slow, the damage is usually done and the oil field may even be depleted before the order becomes effective, even if the authority of the commission is finally upheld. Numerous suits have been brought by East Texas operators against the Railroad Commission, preventing the commission from enforcing its order against the complainants, and leaving the properties in question free to produce at will.

The Need for Legislation

"Proration is totally without effect in East Texas today, six months after the field came into prominence. Proration clearly cannot be enforced in East Texas without additional legislation. There is a determined move on foot, backed by an increasing number of producers, to secure the requisite additional legislation. The exact form of the proposed statute remains to be worked out, but it will probably forbid production in excess of reasonable market demand, will require ratable withdrawals from the several properties in a single oil pool, and will seek to provide the machinery for the enforcement of the program established by orders of the commission. Meanwhile, the East Texas oil field is in a deplorable state. Some properties are producing at the open-flow capacity of the wells; many are shut in entirely. The market structure is demoralized. Posted prices have been withdrawn by the larger purchasers and the postings that are retained have no significance since almost no oil is being purchased in the open market upon that basis. It is unbelievable that this situation should have been permitted to arise. This new, wonderfully valuable oil field is not only being subjected to criminally wasteful methods of exploitation itself, but because of the way in which it is being developed it has plunged the oil industry of the whole nation into chaos.

"Nothing is more certain than that the present state of affairs cannot continue. East Texas production must be curbed and total supply brought into balance with total demand. This can be accomplished very simply and readily provided only that effective proration be established for the benefit of the operators in this field. If the experience in East Texas has served no other good purpose, it has at least demonstrated once and for all time that proration, or ratable taking with a balanced supply-demand relationship, is indispensable to the oil industry so long as potential overproduction exists. The old theory, much quoted by those who oppose control of production, that price alone will control supply cannot be maintained any longer in the face of conditions in East Texas.

"With competition unrestricted and uncontrolled, oil will continue to be produced in East Texas until the wells cease to flow, even though the price goes to 5 cents per barrel. In consequence a great asset will be wasted and many property owners will be damaged. Perhaps, after all, this lesson that crude oil must be produced in orderly fashion and under control, will in time prove to be worth all that it has cost oil producers."

MARKETING TREND IN OIL FIELD EQUIPMENT

(Continued from Page 15)

where the field man can get what he needs promptly and such a system of distribution will be practiced more and more in the future.

With the industry developed to its present enormous size it does not mean that volume in manufacturing will be materially reduced, but rather that methods of distribution must be improved, for major producing companies have found that it was easy to accumulate enormous stocks, and it is to work off those accumulations that many purchasing departments are now devoting the major portion of their efforts, rather than to buying new material. These stocks are being materially reduced and it is anticipated that when price conditions are better and production can be carried on at a profit a good deal of new equipment of all kinds will be needed.

Developing New Fields

Along with the practice followed by the producing companies exemplified by their creed of haste has been the methods followed by the manufacturer and supply company in serving this type of free buyer. To meet the demands of the producing company, which considered that the shortest time possible in getting a well on production was the greatest necessity in connection with the developing a field, the companies who made and sold the materials needed for those operations have built up their organizations upon the same idea of speed and quick service.

It has been the common practice in the past for manufacturers and supply houses to follow the drilling development in all new fields by establishing warehouses in or near the pools. This practice has led to certain towns in the vicinity of each pool becoming the center for distribution, and in many cases the field has developed away from the town of first choice and the supply companies have found it necessary to establish new headquarters at points nearer the scene of activity. In Kansas when the big plays were on it was a very common thing to find that a new pool had been opened adjacent to the one first under development, but too far away to be served from the first group of warehouses, and it was therefore necessary to have two, three or even four sets of warehouses located in towns at comparatively short distances apart, each so placed as to serve its particular adjacent pool. This duplication of investment and men had to be borne by the producing companies in the long run for it was out of the oil secured that all this money had to ultimately come, and if a more conservative drilling campaign had been carried on costs to all would have been lowered.

This practice has not been abandoned even at this late day, but with the recent cuts in crude oil prices the executives have begun to hesitate and give more serious thought before rushing into drilling campaigns in a competitive field for they realize that oil can be procured quickly enough for their needs without unnecessary expenditure of money for development of pools.

In Oklahoma City it has been found, after the first excitement of development was over, that wells that had cost $150,000 to drill could be completed for around $100,000 if care was exercised in reducing drilling speed and selection of equipment. And the unfortunate part of it all is that those wells drilled in haste had a direct tendency to lower the

price of the oil so secured, thus causing a loss in every way.

In Flush Pools

The supply houses that are established in flush pools enjoy a good volume of business for a time but the profits made rarely cover the original investment in land, buildings and equipment and after the boom is over the volume of business to be had is so small that all of the companies cannot enjoy a profit if they remain. One of the best examples of unnecessary expansion of supply companies is the play at Hobbs, N. Mex., a short time ago. About 30 companies moved into the town of Hobbs, and when the field was developed in the orderly manner that the conditions demanded it was found that only 60 wells were drilling at one time, or each supply company had not to exceed an average of 2 wells each for customers. Such a condition could not be profitable to them and they were quick to realize it.

With the leaders in the industry advocating unit operation in the development of an oil pool it seems only logical that the makers and distributors of equipment should give consideration to reducing their investments by adopting some sort of a unit plan. A study of field operations will show about how much material can be used, and knowing that there is already a lot of old material to be used in drilling operations it is not hard to anticipate that only conservative investments in buildings and stocks will be justified.

It is now advocated by some that consolidation of warehouses of supply companies and distributing branches of manufacturers can well be considered for by such methods it will be possible to hold down expenses to a minimum and at the same time give the operators full service that they demand.

After the drilling campaign is over it is also only logical to assume that several companies could consolidate their stocks in a central warehouse and place it in charge of a limited number of men who could well serve the needs of the producing wells and hold costs for such distribution and service to a minimum.

Such consolidated warehouses could be organized in a way that will permit each of the companies to share equally in the expenses of operation and the profits accruing therefrom in proportion to their individual investments and a miscellaneous stock of parts and supplies carried so that no customer would be slighted in having his needs taken care of properly.

Where parts for replacement are needed for machinery sold during the active period it would be possible for each manufacturer to stock in this consolidated warehouse such material as his judgment showed necessary and the customer could then draw upon such stocks as his needs developed.

Co-operation by Buyers

To make such a plan feasible for reducing operating expenses to both the manufacturer, distributor and operator alike, it must be remembered that co-operation on the part of the buyers for the major companies is quite essential and the old practice of favoring individuals with the business of their company during the boom period must be discontinued. By depriving the large distributor or manufacturer of the legitimate profit he might expect to enjoy during the development of the field to favor some small company or individual who only expects to remain there until such time as he can make his desired profit and then move out, and by so doing throw the burden of future service, at a necessarily reduced volume and profit upon the larger companies who must stay on because of their obligations to the producer in that and other fields, is unfair practice.

It is hardly fair to manufacturers who have served the industry over a long term of years and have built up organizations that are recognized as part and parcel of the industry, to allow small competitors to move into a field and reap unusually large profits over a short period because they operate under low overhead expense and maintain no permanent organizations. Such apparent saving as the producer enjoys will not be found to be so real if all things are considered, for in many cases the transient company will have in mind only rendering such service as required during the rush of development and later it will be found that many things have been overlooked and it will cost money to remedy them, and if this is added to the original cost it will be found that the larger and more permanent company could have served them better.

Changes the Order of the Day

For some time many far-sighted men in the industry have recognized the unnecessary costs that have crept into field operations, largely due to great haste in development brought about by the competitive system of drilling wells. Executives now realize that they have no need for great haste in completing wells and have found out that such practice is not in the long run profitable, for even if they can point with pride to the fact that a well has been completed in record time and on flush production repaid the investment in a very short period, it has been shown conclusively that the excess oil brought to the surface by such haste has lowered the price for that commodity over the whole country and they have therefore lost more on older production than they have actually made in the flush fields.

It is therefore in order to reorganize many details in production and disabuse the man on the street of the idea that to drill a well and get oil means that his fortune is made. The petroleum industry is too large to be operated by a series of intensive drilling campaigns, and especially now that there is available an abundance of oil for the needs of the country for the immediate future and the price of this oil is so low that every care must be exercised in its production if any profits are to be made.

The reckless display of wealth that has been made in the past by the general practices followed in developing oil fields has made it apparent to outsiders that there must have been a wide margin of profit between drilling costs and selling prices of the oil, and they have therefore concluded that they should get into the business of producing oil. This apparent profit is not so great as many have assumed, and the last wild rush to drill and produce oil in East Texas is proving to be a very costly lesson to a lot of outsiders who are trying their hand at producing oil for the first time.

Serious minded men in every branch of the petroleum industry know where costs can be reduced, if haste is eliminated from the program, and it is anticipated that those who serve the industry with equipment and supplies will in the future be guided by the wishes of the oil company executives to supply their goods at a fair margin of profit and therefore the tendency to consolidate operations will be ever increasing.

Such consolidation of operations does not mean the stifling of competition, for those companies who are now established in the industry, and others with equipment and material that can find a legitimate place in the industry, will always be assured a market. But this should not mean that for every dollar handled 20 or 25 per cent can be spent for unnecessary duplication of effort, and the American Petroleum Institute's fight for standardization carried on during the past eight years should tend to prove the great need for reduction of unnecessary lost motion and expense in the manufacturing and distribution, as well as in every other department of the industry.

EUGENE B. LAWSON DIES

Eugene B. Lawson, Tulsa oil man, died Thursday, June 25, at his home after suffering from a heart attack. Mr. Lawson was born in Shelbyville, Ky., May 27, 1871. Locating in Nowata, Okla., in 1897 he practiced law for 15 years, later moving to Tulsa. Surviving besides his widow and son are three brothers, William Lawson and Ernest Lawson of Shelbyville, Ky., and Dr. D. M. Lawson of Nowata, and a sister, Miss Bessie Beatty Lawson of Shelbyville, Ky.

WILDCAT OPERATIONS IN TEXAS PANHANDLE

(Continued from Page 30)

Danciger O. & R. Co.'s No. 1 Barnett, 231 ft. S. 330 ft. W, E½ of N 80 ac., Sec. 136, Blk. 3, L&G.N. Sur. ... 3,000,000 ft. gas 3,097 ft; S.D. 3,097 ft.

Parton Holt and Shell Pet. Corp.'s No. 1 Morse, 330 ft. S and E, Sec. 6, Blk. 26, H.&G.N. Sur. ... Rig.

Jean Pet. Co.'s No. 1 Furneaux Bros., 330 ft. N and W, cor. SE, Sec. 200, Blk. B-2, H.&G.N. Sur. ... S.D. 2,770 ft; P.B. 2,430 ft. and shot with 80 qts. 2,409-30 ft.; C.O.

Magnolia Pet. Co.'s No. 1 Heaston, NE cor. S½ NE, Sec. 164, Blk. 3, L&G.N. Sur. ... Rig on ground.

Nelson et al's No. 1 Crews, 330 ft. S and E, NW, Sec. 13, Blk. 35, H.&G.N. Sur. ... S.D. 2,619 ft.

Operators Royalty & Prod. Co.'s No. 2 Vanniman, 330 ft. S and W, E½ NE, Sec. 175, Blk. 3, L&G.N. Sur. ... Drlg. cmt.; T.D. 3,308 ft; 6,000,000 ft. gas 2,150-55 ft.

Pulse-Shell Pet. Corp.'s No. 1 Simpson, SE NE, Sec. 140, Blk. 3, L&G.N. Sur. ... Drlg. 1,115 ft.

Steckoll & Reiger's No. 1 Davidson, 660 ft. N and W, Sec. 64, Blk. B-2, H.&G.N. Sur. ... Drlg. 2,842 ft.

Steckoll & Reiger's No. 1 Short, 330 ft. S and W, Sec. 17, B. E. Chaney Sur. ... S.G. 2,110 ft; drlg. 2,331 ft; estimated 3,000,000 ft. gas 2,315 ft.

Sullivan & Ochiltree's No. 1-A Morse, 330 ft. S and W, N½ NE, Sec. 15, Blk. A-9, H.&G.N. Sur. ... S.D. 2,636 ft.

Tarber's No. 1 Saunders, 330 ft. N and W, Sec. 3, Blk. 1, B.S.&F. Sur. ... Location.

HUTCHINSON COUNTY

Danciger O. & R. Co.'s No. 1 Johnson, 330 ft. N and W, SE, Sec. 34, Blk. Y, A.&B. Sur. ... Spudded and S.D.

Deal O. & G. Co.'s No. 2 Sanford, 330 ft. N and E of N 80 ac., S 160 ac., Sec. 31, Blk. 46, H.&T.C. Sur. ... S.D. 450 ft.

Huber Prod. Co.'s No. 1 Johnson Bros. (Premier), 330 ft. N and E of W 60 ac., N 80 ac., NW, Sec. 3, Blk. Y, A.&B. Sur. ... Big gas 2,330 ft. and 2,395 ft.; S.O. 2,974 ft; drlg. 3,040 ft.

Liner et al's No. 1 Johnson Bros., 990 ft. S, 330 ft. E, W½ SE, Sec. 29, Blk. Y, A.&B. Sur. ... Spudded and S.D.

Skelly Oil Co.'s No. 1 Johnson Bros., 660 ft. S and W, SE, Sec. 30, Blk. Y, A.&B. Sur. ... S.D. 3,115 ft.

Stanolind O. & G. Co.'s No. 2-B Pitcher, 990 ft. S, 330 ft. E, W½ SW, Sec. 19, Blk. M-21, T.C.R.R. Sur. ... Moving in material.

Timms-Deatch's No. 4 Moore, 330 ft. N and W, Sec. 124, Blk. 4, I.&G.N. Sur. ... Rig.

LIPSCOMB COUNTY

Okla. Public Service Co.'s No. 1 C. W. Jones, NE SW, Sec. 100, H.&T.C. Sur. ... T.D. 5,002 ft.

LUBBOCK COUNTY

Center Oil Co.'s No. 1 Bowles Ranch ... Small S.O. 1,133-40 ft; S.D. 4,167 ft.

MOORE COUNTY

Cloud & Dana's No. 1 Jones, 330 ft. N and E, SW, Sec. 169, Blk. 3-T, T.&N.O. Sur. ... Estimated 74,000,000 ft. gas; killed gas to run csg.; T.D. 3,318 ft; drlg. 3,445 ft; 3,000,000 ft. gas 3,337 ft.

Dana O. & G. Co.'s No. 1 R. Utey, 330 ft. S and W, NE, Sec. 135, Blk. 3, T.&N.O. Sur. ... T.D. 3,525 ft; plugging back to 3,300 ft. for gas.

Interstate's No. 1 Nield, C NE, Sec. 18, Blk. 44, H.&T. C. Sur. ... Location.

Magnolia Pet. Co.'s No. 1 Jones, 330 ft. N, 330 ft. E, Sec. 170, Blk. 3-T, T.&N.O. Sur. ... Drlg. 2,255 ft.

Sunray Oil Co.'s No. 1 Rupert, 660 ft. N, 330 ft. E, NW, Sec. 151, Blk. 3-T, T.&N.O. Sur. ... Cellar.

Sunray Oil Co.'s No. 2 Jones, 330 ft. N and W, W½ SW, Sec. 164, Blk. 3-T, T.&N.O. Sur. ... Rig on ground.

Texas Interstate P. L. Co.'s No. 1-33 Thompson, C N½ NE, Sec. 23, Blk. 44, H.&T.C. Sur. ... Location.

Texas Interstate P. L. Co.'s No. 1-33 Sneed, C SW, Sec. 33, Blk. 6-T, T.&N.O. Sur. ... Cmtd. 12-in. csg. 533 ft.

Texas Interstate P. L. Co.'s No. 1-37 Sneed, C NW, Sec. 37, Blk. 6-T, T.&N.O. Sur. ... Location.

Texas Interstate P. L. Co.'s No. 2-55, C SE, Sec. 55, Blk. 6-T, T.&N.O. Sur. ... Drlg. 2,193 ft.

MOTLEY COUNTY

Matador Oil Corp.'s No. 1 Owens, C NE, Sec. 10, Blk. G, B.&B. Sur. ... S.D. 530 ft.

OLDHAM COUNTY

Amalgamated German-American Oil Corp.'s No. 1 Norton, 330 ft. S and E, Sec. 12, T.&N.O. Sur. ... S.D. 400 ft.

Chambers et al's No. 1 Herring, CNL, Sec. 20, Blk. 8, G.C.&S.F. Sur. ... S.D. 800 ft.

ROBERTS COUNTY

Chicken Creek Oil Co.'s No. 1 Ledrick, 330 ft. N and W, Sec. 55, Blk. C, G.&M. Sur. ... Drlg. 862 ft.

Travis et al's No. 1 Cunningham, 330 ft. S and W, Sec. 74, Blk. M-2, H.&G.N. Sur. ... S.D. 2,650 ft.

WHEELER COUNTY

Clarity et al's No. 1 Porter, 330 ft. S and W, SE, Sec. 2, Blk. A-9, H.&G.N. Sur. ... Driving 20-in. csg. at 250 ft.

EAST CENTRAL TEXAS

(Continued from Page 28)

tion 75 bbls. per hour through eleven-sixteenths-inch tubing choke, total depth 3,624 feet. Houston Oil Co.'s No. 2 Walton-Brightwell, top sand 3,658 feet, initial production 130 bbls. per hour through 1-inch tubing choke, total depth 3,662 feet. Stanolind Oil & Gas Co.'s No. 2 Morse, top sand 3,577 feet, base 3,623 feet, initial production 80 bbls. per hour through three-fourths-inch tubing choke, total depth 3,625 feet.

Magnolia Petroleum Co.'s No. 1 E. B. S. Florey, top sand 3,647 feet, pinched to 10 bbls. per hour, total depth 3,668 feet. Navarro Oil Co.'s No. 4 Brightwell, top sand 3,616 feet, initial production 70 bbls. per hour through three-fourths-inch tubing choke, total depth 3,680 feet. Strube-Collins & Wheelock's No. 1 E. R. Russell, top Pecan Gap 2,735 feet, base 3,142 feet, top Austin chalk 3,620 feet, base 3,751 feet, top sand 3,751 feet, initial production 110 bbls. per hour through three-fourths-inch tubing choke, total depth 3,800 feet.

Ray Martin's No. 2 Russell, top sand 3,734 feet, initial production 98 bbls. per hour through three-fourths-inch tubing choke, total depth 3,794 feet. Humble Oil & Refining Co.'s No. 2 Christian, top sand 3,720 feet, initial production 63 bbls. per hour through three-fourths-inch tubing choke, total depth 3,739 feet. Nat Hunter's No. 1-B Buntyn, top sand 3,613 feet, estimated 15,000-bbl. well, total depth 3,630 feet. Manahan Drilling Co.'s No. 1 Jernigan, top sand 3,611 feet, initial production 95 bbls. in 15 minutes through open casing, total depth 3,633 feet. Devonian Oil Co.'s No. 3 Motley, top sand 3,685 feet, initial production 129 bbls. per hour through three-fourths-inch tubing choke, total depth 3,703 feet. Humble Oil & Refining Co.'s No. 1 Henry Sexton, top sand 3,724 feet, initial production 103 bbls. per hour through three-fourths-inch tubing choke, total depth 3,764 feet. E. L. Chapman's No. 1 Oren Russell, top sand 3,672 feet, initial production 111 bbls. in 30 minutes through 1½-inch tubing choke, total depth 3,677 feet.

Humble Oil & Refining Co.'s No. 2 Silvey, top Pecan Gap 2,733 feet, base 3,118 feet, top Austin chalk 3,570 feet, base 3,736 feet, sand 3,736-41 feet, initial production 85 bbls. first hour through three-fourths-inch tubing choke, total depth 3,741 feet. H. L. Hunt's No. 1 Smith-Wilson, top Pecan Gap 2,760 feet, base 3,073 feet, top Austin chalk 3,525 feet, base 3,683 feet, sand 3,683-

3,720 feet, initial production 220 bbls. per hour open through tubing, total depth 3,720 feet. Tunstill and others' No. 1 J. Henshaw, top Pecan Gap 2,741 feet, base 3,126 feet, top Austin chalk 3,616 feet, base 3,675 feet, sand 3,765-95 feet, initial production 40 bbls. first 30 minutes through eleven-sixteenths-inch choke on tubing, total depth 3,795 feet. East Texas Refining Co.'s No. 1 Clara Webb, top sand 3,635 feet, initial production 90 bbls. per hour through open tubing, total depth 3,662 feet.

Gregg County

Gulf Production Co.'s No. 3 Ben Watson, top sand 3,541 feet, initial production 31 bbls. per hour through one-fourth-inch tubing choke, total depth 3,566 feet. Shell Petroleum Corp.'s No. 5 W. W. Elder, top sand 3,536 feet, initial production 81 bbls. per day through two-sixty-fourths-inch tubing choke, total depth 3,556 feet.

Shell Petroleum Corp.'s No. 6 W. W. Elder, top sand 3,561 feet, initial production 207 bbls. per hour through open tubing, total depth 3,616 feet. Empire Gas & Fuel Co.'s No. 1 Muckleroy, top sand 3,587 feet, initial production 161 bbls. per hour through three-fourths-inch tubing, total depth 3,602 feet. Shell Petroleum Corp.'s No. 7 J. B. Watson, top sand 3,560 feet, initial production 111 bbls. per hour through three-fourths-inch tubing choke, total depth 3,611 feet. McKinney and others' No. 1 Henry McNeely, top sand 3,667 feet, initial production 130 bbls. per hour through three-fourths-inch tubing choke, total depth 3,678 feet. Magnolia Petroleum Co.'s No. 2 Griffin Davis, top sand 3,645 feet, initial production 120 bbls. in 15 minutes open, total depth 3,650 feet.

Mid-Kansas Oil & Gas Co.'s No. 3 Blackman, top sand 3,640 feet, initial production 225 bbls. per hour through three-fourths-inch tubing choke, total depth 3,654 feet. J. S. Rusking and others' No. 2 J. M. Dickson, top sand 3,566 feet, initial production 142 bbls. per hour through three-fourths-inch tubing choke, total depth 3,591 feet. Mid-Kansas Oil & Gas Co.'s No. 1 J. E. Choice, top sand 3,694-3,700 feet, initial production 60 bbls. per day by heads through tubing, total depth 3,702 feet.

Gulf Production Co.'s No. 2 Crim, top sand 3,581 feet, initial production 134 bbls. per hour through three-fourths-inch tubing choke, total depth 3,588 feet. Shell Petroleum Corp.'s No. 1 J. S. Elder and others, top sand 3,534 feet, initial production 110 bbls. per hour through three-fourths-inch tubing choke, total depth 3,600 feet. Shell Petroleum Corp.'s No. 1 Williams-Bonner, top sand 3,526 feet, initial production 95 bbls. in 24 hours through five-sixty-fourths-inch tubing choke, total depth 3,564 feet. Gulf Production Co.'s No. 1 Culver, top sand 3,541 feet, initial production 104 bbls. per hour through three-fourths-inch tubing choke, total depth 3,556 feet.

Shell Petroleum Corp.'s No. 4 W. W. Elder, top sand 3,556 feet, initial production estimated 120 bbls. per hour through three-fourths-inch tubing choke, total depth 3,604 feet.

Byrd-Frost, Inc.'s No. 1 Andrews, top sand 3,634 feet, initial production 94 bbls. in five minutes wide open, total depth 3,646 feet.

Shell Petroleum Corp.'s No. 3 Knowles, top sand 3,650 feet, initial production 100 bbls. in 24 hours through six-sixty-fourths-inch tubing choke, total depth 3,653 feet.

Petroleum Finance Corp.'s No. 1 Lacy, top sand 3,554 feet, initial production 231 bbls. per hour through open tubing, total depth 3,570 feet.

Byrd and Gulf Production Co.'s No. 1 Cammoras Brothers, dry and abandoned, total depth 3,518 feet.

Cranfill & Reynolds' No. 1 Mollie Fenn, oil sand 3,606-50 feet, initial production 160 bbls. in 15 minutes open flow, total depth 3,650 feet.

Overlees and others' No. 1 Mollie Fenn, oil sand 3,600-35 feet, initial production 75 bbls. through three-fourths-inch choke, total depth 3,635 feet.

Prairie Oil & Gas Co.'s No. 1 I. Isley, oil sand 3,527 feet, initial production 132 bbls. per hour through eleven-sixteenths-inch tubing choke, total depth 3,552 feet.

Cherokee Chief Oil Co.'s No. 1 Todd, oil sand 3,519-33 feet, initial production 268 bbls. per hour through 2½-inch tubing open and nine-sixteenths-inch choke, total depth 3,633 feet.

Tom David's No. 1 W. S. Pryor, total depth 65 feet, moved off and abandoned well.

Upshur County

Fleetborn Oil Co.'s No. 2 J. K. Edwards, oil sand 3,607-33 feet, initial production 98 bbls. per hour through eleven-sixteenths-inch tubing choke, total depth 3,633 feet.

Clark and Cowden's No. 1 J. W. Free, oil sand 3,590-3,630 feet, initial production 52 bbls. open flow for 15 minutes through 2½-inch tubing, total depth 3,630 feet.

Smith County

Magnolia Petroleum Co.'s No. 2 J. R. Wright, top Pecan Gap 2,665 feet, base 3,065 feet, top Austin chalk 3,510 feet, base 3,620 feet, sand 3,603-88 feet, initial production 137 bbls. first 15 minutes through casing, total depth 3,688 feet.

Lamar County

K. O. Bundy and others' No. 1 Lagatte, abandoned location.

Nacogdoches County

E. L. Chapman's No. 1 Tilliford-Hunt, dry and abandoned, total depth 4,220 feet.

Van Zandt County

The Pure Oil Co.'s No. 7 F. B. Smith, initial production on eleven-sixteenths-inch choke estimated 100 bbls., total depth 2,938 feet.

NORTH AND WEST TEXAS

(Continued from Page 30)

Cosden Refg. Co., Big Spring	6,198
Col-Tex Refg. Co., Colorado	8,197
Great Western Refg. Co., Big Spring	2,596
Tonkawa Refg. Co., Pyote	1,449
Wickett Refg. Co., Wickett	273
Total	23,520

COMPLETIONS IN PANHANDLE DISTRICT

Gray County

Wilcox Oil & Gas Co.'s No. 21 Coombs, top pay 3,035-37 feet, initial production estimated 30 bbls. daily, total depth 3,019 feet.

Moore County

Plains Holding Co.'s No. 2 Bivins, initial production 46,500,000 feet of gas, total depth 2,550 feet.

NORTH TEXAS PRODUCTION

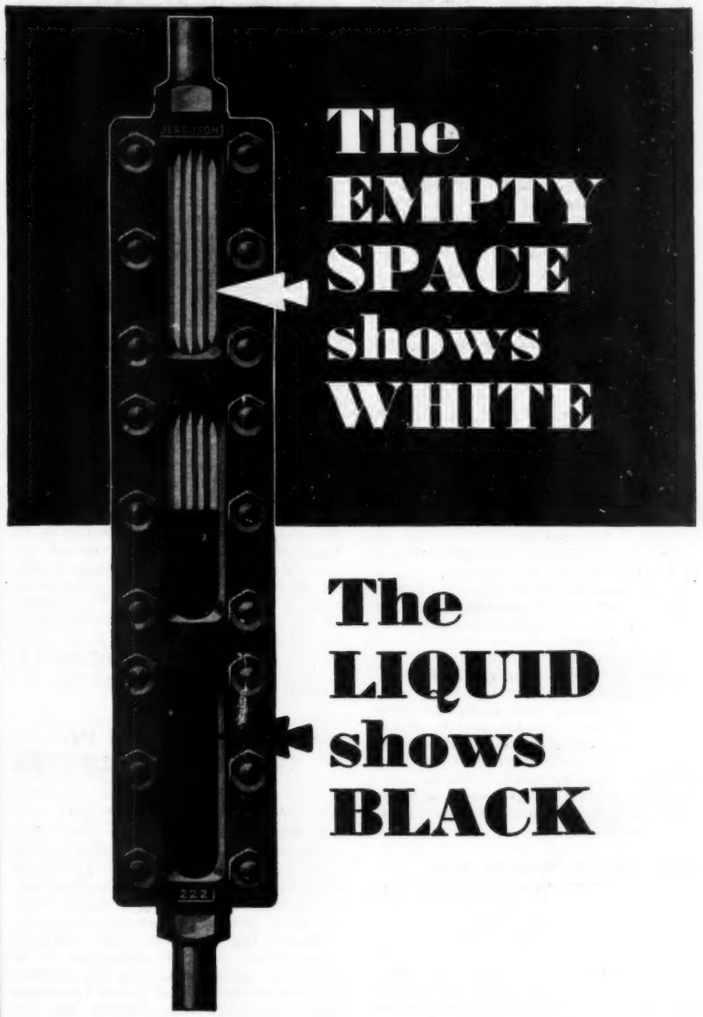
Week Ending June 27

Panhandle district—	
Carson County	5,936
Gray County	41,915
Hutchinson County	10,770
Moore County	1,252
Wheeler County	191
Total production this week	60,064
Total production last week	58,940
Increase	1,124
Wichita Falls district—	
Archer County	13,413
Baylor County	480
Clay County	722
Cooke County	1,350
Foard County	72
Haskell County	26
Jack County	2,027
Montague County	3,528
Throckmorton County	393
Wilbarger County	12,801
Wichita County	19,145
Young County	12,609
Total production this week	67,066
Total production last week	64,780
Increase	2,286
Ranger district—	
Brown County	3,481
Callahan County	2,255
Coleman County	1,702
Comanche County	810
Palo Pinto County	286
Eastland County	3,126
Shackelford County	3,721
Stephens County	4,324
Total production this week	19,705
Total production last week	19,919
Decrease	214

BUILD SEMICOMMERCIAL UNIT

OKMULGEE, Okla., June 30.—W. B. Pine, R. D. Pine and Dr. R. M. Isham will build a 20-bbl. semicommercial cracking unit here to develop a process originating in the laboratories of Doctor Isham. In the operation of the new process residue gas is heated and brought in contact with topped crude at the cracking temperature to yield a motor fuel.

This gage shows in *BLACK* and *WHITE*



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JERGUSON GAGE & VALVE CO.

MYSTIC AVE. AND NORTHERN ARTERY
SOMERVILLE, MASS.

CAR OWNERS AGAINST GASOLINE TAX ADVANCES

(Continued from Page 111)

add to revenues from which they appropriate public monies. There are more than 26,000,000 motor vehicles running in the United States. The circle of those bearing the tax directly and indirectly embraces everybody.

The petroleum industry and automobile manufacturers have never offered serious objection to paying for the construction and maintenance of public roads. The yearly addition of hard surfaced highways has meant a corresponding increase in miles run by automobiles. They are opposed to the folly of taxing gasoline so heavily as to lessen its consumption, and they resent the growing tendency to divert gasoline tax collections to other purposes than road building. They feel that a tax of from 100 to 200 per cent of the wholesale cost is not a revenue measure, but a restrictive penalty.

Last year United States motorists paid a total of $525,000,000 in gasoline taxes. That is one-third of the total expenditure for roads and about half the total taxes on automobiles. It is a great deal more than the aggregate net earnings of all the oil companies in the United States last year, and perhaps in any previous year save 1925. The petroleum industry appears to be in business primarily to furnish a taxable commodity by which the states can support a large part of their fiscal expenditures. Recently it has been suggested that the Federal Government add a cent tax on what the states collect.

The outstanding evil is the loading down of an article because of the ease with which tax collections can be made without expense, and not because of any inherent reason in the nature of the commodity or the uses to which it is put. With gasoline selling in the primary markets under 3 cents a gallon, the industry submits that the present rate of taxation in many states is plain oppression. Furthermore, because of the temptation to circumvent an unfair law it is doubtful if the state imposing a tax of more than 3 cents a gallon increases its revenues materially.

BUYERS PREPARE FOR CHEAP STORED OIL

(Continued from Page 13)

The three essentials considered at the Austin meeting were: Ratable and equitable takings from all leases; production must be held within the market demand, and must be taken ratably in order to insure the greatest ultimate yields; and all wells must be connected in order to insure ratable takings.

The Humble Oil & Refining Co. has made six inside locations on its Crim lease in the Kilgore Pool and intends to drill immediately to obtain its share of production before pressure goes dead because of offset drainage, causing the wells to be pumped, and also causing the probabilities of immediate water.

The lease is in a low pressure area, and drainage by offset lease wells will create a loss in production and pressure in the Humble wells and leases, consequently the company will retaliate in drilling up its leases to offset any losses that might otherwise be incurred by drainage.

In the meeting at Austin it was shown that Humble Oil & Refining Co.'s No. 7 Crim in the Kilgore Pool soon flowed salt water after it was opened up, and that the water increased as the well was allowed to flow, showing the proximity of water in this pool, and how flowing the wells open would cause much harm to be done to all producers in the pool. When the well was opened it was flowing pipe line oil, but within 20 minutes after flowing open water appeared, and at the end of one and one-half hours' test it was producing 9½ per cent salt water. The well has been producing 2,100 bbls. per day, but was opened up to 7,200 bbls. per day on this test.

Salt Water Menace

E. V. Foran, new technical advisor of the central proration committee, testified before the Austin hearing it was his belief that if the methods as used in the Yates Pool were employed in the East Texas district the salt water damage would be eliminated, but that unless a check was placed on production the same situation will result as in the Hendricks Pool, Winkler County, where 10 bbls. of water is produced to 1 bbl. of oil.

Mr. Foran also estimated that the contact of edge water on the western side of the field was around 40 miles in length and affected around 50,000 acres of leases.

Two companies, the Humble Oil & Refining Co. and Magnolia Petroleum Co., have constructed large salt water disposal vats in the Kilgore Field for present purposes, and all other operators and companies are faced with the same problem of disposing of an enormous amount of water, probably within a short time, especially in the Kilgore Pool where the water has shown up in larger quantities, and deeper within the pool than in the other two areas.

East Texas Refining Co.'s No. 1 Tyiska, on the western side of the Joiner Pool, in the R. W. Wilson Survey, Smith County, is making 85 per cent b.s. and water when opened, probably the largest per centage of water of any of the producing wells. When pinched to a few barrels per hour it shows only 5 per cent salt water and 3 per cent b.s., bearing out the theory that curtailment of production of the wells in the district would not only help to relieve the overproduction situation in the district, State and country, but would be of untold benefit to all the producers in the district, and bring them far greater profits on their leases than they can hope to obtain if production goes on unchecked. Water comes up in all wells throughout the field, and eventually ruins them months before they would otherwise be injured if pinched in to a nominal production per day.

GASOLINE MARKET IN OKLAHOMA ON UPTURN

(Continued from Page 12)

000 bbls., or almost 30 per cent when compared with the corresponding date of last year. Gasoline stocks at inland Texas refineries were 314,000 bbls. less and North Louisiana and Arkansas 265,000 bbls. less or a decrease of almost 1,900,000 bbls. for the entire Mid-Continent area. In this connection it is worthy of special note that the gasoline stocks at Arkansas and North Louisiana refineries totaled only 130,000 bbls. on June 20, a figure which contrasts with the 395,000-bbl. total of the year previous. The present stocks are less than usually required for working stocks at the conclusion of the summer demand.

These are the figures pointed to by those who have felt for some time that the refinery gasoline market could give a much better account of itself than it has if it had not been completely overshadowed by the large excess crude oil production which the refiners as a unit have refused to absorb by running their plants far in excess of refinery demand.

This statistical situation took on market significance the past week when heavy buying entered the market. Buyers quickly found that the large supply of gasoline for prompt shipment which they expected was not available. The cheapest sources of supply which have sold the U. S. Motor grade as low as 2 cents or less for July delivery had little material left to offer the latter part of last week and remaining refiners were less anxious to sell. The figure of 3,500,000 bbls. of gasoline at Oklahoma, Kansas and Missouri refineries previously mentioned is admittedly more than working stocks although there are a number of the larger refiners with considerable storage at their plants who have already purchased from other refiners or will before the end of the summer to take care of the demands of their own stations and jobber customers. Most of those who do have excess storage are not in position where they are forced to sell and they will await higher prices before offering this material on the open market.

Buying General

The buying was general in the domestic market. One large Oklahoma refiner last week removed a considerable quantity of low priced gasoline for July including material in the hands of brokers when over 200 cars were purchased. There was some other interrefinery buying with more in prospect.

The bulk of the business, however, was coming from jobbers and the bulk stations of the refiners. The large orders unquestionably are in part accounted for by the preparations being made for a heavy gasoline consumption during the July 4 vacation period. Some market observers were inclined to credit all of the improvement of the past week as being due to the July 4 consumption and they are predicting a decreased tank car demand next week.

Other market students do not agree with this opinion. They are confident that the buying of the past week is more than a temporary holiday spurt and reflects a healthy situation between supply and demand as previously explained. Some jobbers have been pursuing a hand-to-mouth policy in buying gasoline for several weeks and have not accumulated their usual storage to supply part of their summer demand. Many of these buyers have been in the market with rush orders and are also asking for prices over July. At the same time several refiners have oversold and are behind in their shipments bringing a condition which always makes for higher prices.

Gasoline and Naphtha

A week ago there was plenty of U. S. Motor gasoline available direct to the trade at 2⅛ cents basis Group 3. In fact, East Texas gasoline was sold both for spot shipment and delivery over July at 2 cents basis Group 3. Friday and Saturday, the spot market stiffened to 2¼ cents and on Monday and Tuesday quotations had advanced to a low of 2⅜ cents with a high of 2¾ cents. Sellers were reluctant to quote over July and predictions of a 3-cent market early in July were heard.

The main buying in the U. S. Motor grade and the advances in the higher gravity grades was not as rapid. Trading is light in these grades in Oklahoma and there was no rush among buyers to cover their requirements. On Tuesday some 400 endpoint was still available at 2⅝ cents but other refiners had advanced their quotations to 3 cents. A price of 2¾ cents for 390 and 3 cents appeared to be the low on the 390 and 375 endpoint grades. Other quotations were as high as 3¼ cents. The 350 and 360 endpoint grades started at a low of 3⅛ cents.

Naphtha prices were advanced along with the U. S. Motor grade. Unable to get the U. S. Motor grade at low prices, some buyers were making inquiries for 450 endpoint gasoline and the various grades of blends. These products were also fractionally higher.

Natural Gasoline

The natural gasoline market has not been as strong as the refinery market. The weakness centers in the North and Central Texas market where the demand for shipments to the coast has been slow. Ordinarily, the Texas manufacturers have as strong a price situation as the Oklahoma and Kansas manufacturers due to their freight advantage in shipments to the south. For the past three weeks they have been forced to ship north in competition with Oklahoma manufacturers absorbing a freight rate advantage of the latter manufacturers amounting to one-fourth cent per gallon.

With this condition the Grade AA market in Oklahoma was strong at 1⅝ to 1¾ cents on Tuesday while Texas manufacturers were selling at a low of 1⅜ cents.

The Grade A was quoted at 1⅞ to 2 cents in Oklahoma and the remaining grades at 1½ cents. Manufacturers are expecting their market to reflect the improved condition of the refinery market within a few days.

Kerosene

Kerosene prices slumped to lower levels the latter part of last week with East Texas material available at 1½ cents

CALIFORNIA CRUDE OIL PRICES

(Continued from Page 109)

UNION OIL CO. OF CALIFORNIA

Crude Oil Prices for Its Purchases at the Well for Crude Produced in Strict Accordance With the Production Allocations Made by the California Statewide Curtailment Committee Effective 7 a.m., June 20, 1931

(All gravities above those quoted take highest price for that field)

Gravity °A.P.I.	Signal Hill	Alamitos Heights Seal Beach	Huntington Beach	Athens Rosecrans Dominguez	Torrance	Santa Fe Springs *	Playa Del Rey*	E. Coyote Richfield	Montebello	Santa Paula	Orcutt	Coalinga	Lost Hills	McKittrick Kern River Sunset-Midway Elk Hills Buena Vista Hills	Gravity °A.P.I.
11-13.9	....	....	....	....	....	....	....	....	....	....	....	....	....	$.50	11-13.9
14-14.9	$.65	$.65	$.65	....	$.65	....	....	$.65	$.65	$.65	$.55	$.55	$.55	.55	14-14.9
15-15.9	.65	.65	.65	....	.65	....	....	.65	.65	.65	.55	.55	.55	.55	15-15.9
16-16.9	.65	.65	.65	....	.65	....	....	.65	.65	.65	.55	.55	.55	.55	16-16.9
17-17.9	.65	.65	.65	....	.65	....	....	.65	.65	.65	.55	.55	.55	.55	17-17.9
18-18.9	.65	.65	.65	....	.65	....	....	.65	.65	.65	.55	.55	.55	.55	18-18.9
19-19.9	.65	.66	.65	....	.65	....	$.65	.65	.65	.65	.55	.55	.55	.55	19-19.9
20-20.9	.65	.65	.65	....	.65	....	.65	.65	.65	.65	.56	.55	.55	.55	20-20.9
21-21.9	.65	.65	.65	....	.65	....	.66	.66	.65	.65	.57	.55	.57	.55	21-21.9
22-22.9	.65	.65	.65	....	.66	....	.67	.67	.65	.65	.59	.55	.59	.56	22-22.9
23-23.9	.67	.67	.67	....	.67	....	.68	.68	.65	.65	.61	.55	.60	.58	23-23.9
24-24.9	.69	.69	.69	$.69	.68	$.65	.69	.69	.65	.66	.63	.55	.62	.61	24-24.9
25-25.9	.71	.71	.71	.71	.70	.65	.70	.70	.65	.68	.65	.57	.64	.64	25-25.9
26-26.9	.73	.73	.73	.73	....	.65	....	.72	....	.70	.67	....	.66	.66	26-26.9
27-27.9	.75	.75	.75	.75	..	.68	....	.74	..	.72	....	....	.67	.68	27-27.9
28-28.9	.77	....	....	.77	....	.71	....	....	....	.74	....	....	.69	.71	28-28.9
29-29.9	.79	....	....	.79	..	.73	....	....	....	.76	....	....	.71	.74	29-29.9
30-30.9	.81	....	....	.81	....	.75	....	....	....	.78	....	..	.72	.76	30-30.9
31-31.9	....	....	....	.83	..	.78	....	....	....	....	....	....	....	....	31-31.9
32-32.9	....	....	....	.85	....	.80	....	....	....	....	....	....	....	....	32-32.9
33-33.9	....	....	....	.87	....	.83	....	....	....	....	....	....	....	....	33-33.9
34-34.9	....	....	....	.89	....	.85	....	....	....	....	....	....	....	....	34-34.9

*Subject to a gathering charge of 5 cents per barrel.

basis Group 3. In shipments to the trade 1⅞ to 2⅛ cents was the going market in Oklahoma, the first of the week.

Fuels

No change was noted in residuum fuel oils, distillates and gas oils during the week. Some of the trade expects these products also to improve provided the gasoline market continues strong. The surplus of these materials is confined to the high cold test grades and they have been dominating the market. High cold test fuels with gravities as high as 26 are available at 20 cents. Texas Panhandle and East Texas high cold test fuels continue to sell as low as 15 cents basis Group 3.

Furnace oil trading is light. There are buyers who are willing to make spot purchases and there have been inquiries for flat prices for the season starting September 1. Most sellers are not interested in immediate or future business at present quotations. Considerable gas oil material has been thrown on the market and sales of U.G.I. and high cold test material at five-eighths cent per gallon were reported.

Lubricants

The harvest season has brought a better demand for some of the specialty oils, the demand promising to be much larger than it was last year. The demand for motor oils has also improved but there is no disposition on the part of sellers to advance prices on any product. Distress bright stocks, steam refined stock and some of the lower viscosity neutral oils are offered from time to time. The larger manufacturers did not change their prices during the week.

Sales of 50 and 60 tons of 124-126 wax at 2 cents New Orleans is reported to have been placed with Oklahoma refiners the past week. The net back at the refinery was approximately 1¾ cents. The domestic demand has been fair at low prices.

SOCONY-VACUUM CORPORATION ADMITTED

(Continued from Page 112)

these bonds have been selected by lot for redemption at 101¾ and accrued interest on August 1, 1931. Bonds designated for redemption may at any time up to and including the thirtieth day prior to August 1, next, be converted at the option of holders into Class B common.

Penn-Mex Fuel

Penn-Mex Fuel Co. has declared a dividend of 75 cents, payable June 24 to stock of record June 17. This is the first dividend payment since December 15, last, when $1 was paid. The company does not have regular dividend periods.

Twenty Representative Stocks

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange and New York Curb, based on closing quotations for Wednesday, was as follows:

Oct. 22	31.88	Feb. 25	29.33
Oct. 29	32.80	Mar. 4	27.67
Nov. 5	31.77	Mar. 11	26.53
Nov. 12	30.18	Mar. 18	26.78
Nov. 19	31.54	Mar. 25	26.35
Nov. 26	30.86	Apr. 1	24.80
Dec. 3	30.53	Apr. 8	25.52
Dec. 10	28.57	Apr. 15	24.72
Dec. 17	25.42	Apr. 22	22.72
Dec. 24	25.68	Apr. 29	20.54
Dec. 31	26.15	May 6	20.74
Jan. 7	27.56	May 13	20.38
Jan. 14	27.31	May 20	19.25
Jan. 21	27.55	May 27	18.35
Jan. 28	27.26	June 3	18.00
Feb. 4	27.26	June 10	19.62
Feb. 11	28.76	June 17	19.23
Feb. 18	28.53	June 24	22.33

Skelly Oil

Directors of Skelly Oil Co. voted to omit for the present the next quarterly dividend, due August 1, of $1.50 a share on the preferred stock.

The announcement said:

"It is believed that the depression in the oil industry has substantially reached the bottom and that the next major movement will be upward, but since the duration of present conditions cannot be definitely determined at this time, the directors are of the opinion that until a change for the better is realized it is wise and provident and in the best interest of the stockholders to practice careful conservation of working capital and the most rigid economy in operations. The current policy of the company is directed toward these ends."

Macmillan Suit Brings Out Divergent Thought On Merit of Proration

HOUSTON, Tex., June 29.—The case of the Macmillan Petroleum Corp., in which this company is seeking a restraining order against the State Railroad Commission to prevent the enforcement of proration against its properties in East Texas, has been taken under advisement by the three federal judges who sat in a three-day hearing of the suit here June 24, 25 and 26.

The three judges, Duval West, J. C. Hutcheson and Randolph Bryan, stated they probably would not make a decision until after the state Civil Court of Appeals makes a decision in the Danciger Oil & Refining Co.'s suit to restain the commission from enforcing proration against the latter company's wells in the Panhandle. The decision probably will be made known in San Antonio where the judges are sitting as the Federal Court for the Western District of Texas.

The Macmillan suit, which is looked upon as a test case for proration of East Texas, resolved itself from the start into a hearing on the merits of proration. The injunction is being sought by Alfred Macmillan, head of the Macmillan Petroleum Corp., on the grounds that the Railroad Commission has no authority to enforce proration, that there is no physical waste in East Texas operations and that properties of the company will surfer heavy losses if proration is enforced.

Upholding proration as constitutional and a means of conservation of natural resources, preventing the intrusion of water, prolonging the life of the field and increasing the recovery of oil, the Railroad Commission, as the defendant in the suit, placed on the stand a number of leading authorities, geologists and petroleum engineers. These included Robert R. Penn, of Dallas, chairman of the central proration committee of Texas; E. V. Foran, petroleum engineer of Wichita Falls; Joe H. Russell, assistant general superintendent of the Gulf Production Co., Houston; R. W. Richmond, chief umpire in East Texas for the commission, and Wallace E. Pratt, director in charge of the geological department of the Humble Oil & Refining Co., Houston.

Those placed on the stand for the plaintiff included J. S. Hudnall of Tyler, consulting geologist, and Ralph Arnold, Los Angeles, Calif., who said the sand under the Macmillan properties was of such a nature as to prevent "channeling" and trapping of oil. They also stated that the salt water hazard was largely one of wells being drilled too deep into the sand and too close to the water table. They blamed unskilled and careless drilling, and not rapid oil withdrawal as the cause of the water intrusion so far in the field.

In cross-examination of witnesses for the Railroad Commission, attorneys for the Macmillan Petroleum Corp. attempted to show that proration was designed more as a market or economical factor than a means to prevent waste.

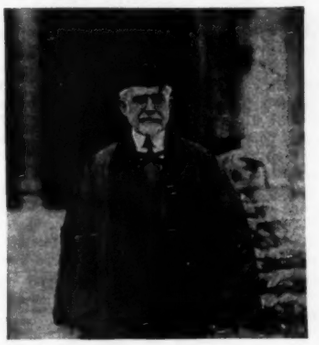
On the other hand, defense witnesses testified that proration is needed to obtain the maximum production from the field by ratable and even withdrawals and prevention of water intrusion and exhaustion of gas.

Closing arguments of attorney for the Railroad Commission contended the commission had the authority to issue orders which would prevent physical waste of natural resources such as oil. Plaintiff's attorneys had contended the commission has no specific power to prorate any oil field in Texas.

In addition to the testimony and oral arguments in the hearing, both sides are preparing further briefs and arguments to be filed to supplement what already has been offered.

HENRY LATHAM DOHERTY HONORED BY LEHIGH U

Henry Latham Doherty, president of Cities Service Co. and head of Henry L. Doherty & Co., was honored by Lehigh University at its commencement exercises with the honorary degree of doctor of engineering "in recognition of his distinguished contributions to the art and



Henry Latham Doherty

the science of gas, electric and petroleum production, distribution and utilization."

Mr. Doherty, who is usually thought of as a financier, first was recognized as an engineer of outstanding ability and who continues to devote much time to engineering subject, has on two other occasions been the recipient of honorary doctor degrees.

FRENCH AND BRITISH IN IRAQ LINE CONTRACT

NEW YORK, June 29.—Contracts for approximately $13,650,000 worth of equipment and supplies for use in the construction of the Iraq pipe line were awarded this week, according to reports from London. A large share of the business went to French and British companies, although American firms were awarded orders for some of the technical equipment which will be used in the line's construction.

Construction work on the large Y-shaped pipe line which will carry Iraqian crude from the Tigris to the Mediterranean has been inaugurated, and it is expected that the first oil will be pumped through the line some time in 1935. Survey work has been practically completed, it is understood.

According to a United Press dispatch from Paris: "By skillful financial maneuvering Britain has succeeded in getting control of nearly half of the Mosul output. The Anglo-Persian Oil Co., through the D'Arcy Exploration Co., Ltd., and the Royal Dutch-Shell group, through the Anglo-Saxon Petroleum Co., each have a 23¾ per cent interest. Thus Britain holds 47½ per cent."

The concession held by Iraq Petroleum Co. runs until 2000, and consists of 24 plots of 8 square miles each in northern Iraq along the Tigris. The Iraq government will receive a tax of 4 shillings per ton on all oil produced in the field, plus an annuity of $1,000,000 and a noninterest bearing loan of $1,000,000. In addition, the government holds valuable oil acreage in the region of the Iraq Petroleum Co.'s grant and is reported negotiating for their leasing to other interests.

The new Iraq pipe line will run from Kerkuk by Haditah to the Euphrates near the point where it intersects the frontiers of Syria and Iraq. From that point the French branch of the line will pass by Tadmor to Tripoli, carrying American and French oil, while the British arm of the line passes from Haditah to Jaffa, remaining in British-mandated territory throughout its length.

The first oil to be run through the line will be from the capped wells in the Kerkuk area, although considerable additional production is expected to be developed by the time the line is finished.

COLOMBIAN CONCESSION INCLUDES A PIPE LINE

NEW YORK, June 29.—Details of the terms of the contract between the Colombian government and South American Gulf Oil Co., subsidiary of Gulf Oil Corp., for the development of the Barco concession, have been received here from Bogota.

Under the terms of the contract, Gulf will select one or more areas of at least 125,000 acres for development during the first five years of the life of the contract, and in the following five-year period must select and determine the areas definitely to be developed. The total acreage, including the 125,000 acres first selected, is not to exceed 500,000 acres, and the excess area remaining within the boundaries of the Barco concession will revert to the Colombian government.

The life of the contract is 50 years. During this period, South American Gulf Oil may extract oil, combustible gases and other hydrocarbons, may construct pipe lines, railways, buildings, pumping stations and other equipment necessary for operation of its tracts. The company is required to drill test wells until such exploitation proves definitely that petroleum deposits in commercial quantities do not exist, or until a total minimum daily production of 21,000 bbls. is attained, at which time the company is required to build a pipe line from the concession to tidewater on the Atlantic Coast, the line to be within the boundaries of Colombia. Upon attainment of production of 28,000 bbls. daily, the company is obligated to construct a refinery in Colombia.

South American Gulf agrees to pay the Colombian government $25,000 (United States currency) per year until the government royalty equals or exceeds a royalty of 10 per cent of gross production obtained in the field, or 6 per cent at maritime ports, when cash payments cease. At the expiration of the 50-year period covered by the contract all equipment on the concession becomes the property of the Colombian government, without the payment of any indemnity, but after drilling the first two wells on the concession, the concessionaires have the option of abandoning the concession and removing all equipment.

Under the terms of the settlement of the Barco concession dispute both the Colombian government and South American Gulf Oil Co. agree to withdraw all litigation now pending in the Colombian Supreme Court.

With the exception of the Iraq oil concession, the Barco concession has been one of the most celebrated matters of international interest in recent years. The concession was originally granted by the Colombian government to Gen. Virgilio Barco in 1905, in recognition of General Barco's services to his country. The original concession covered approximately 1,300,000 acres, located on the northern spur of the eastern Andean range, the concession forming the watershed of the Magdalena River on the west and the Maracaibo Basin on the east. The concession was later acquired by Colombian Petroleum Co., controlled jointly by the South American Gulf Oil Co. and the Carib Syndicate, the Colombian government approving the transaction in 1918, but invalidating the grant in 1926. Considerable litigation and diplomatic representations followed the cancellation and in August, last year, following the election of Dr. Enrique Olaya Herrera to the presidency of Colombia, the government of that country reversed its policy and revalidated the concession, in modified form, the revised contract having just been enacted into law by the Colombian congress.

It is expected that South American Gulf Oil Co. will immediately proceed with exploitation work to prove up its concession, and that after the minimum production requirements of the contract are fulfilled, further development will be held in abeyance pending improvement in world petroleum conditions.

NEW IDEAS
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SAFETY FOR THE SHORT STRINGS—

Even the shorter strings of casing require the protection of an efficient float and guide on the way down the well, and that protection is supplied by the Baker Cement Float Collar and the Baker Cement Guide Casing Shoe.

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Late Fields

(Continued from Page 24)

others' No. 1 Phillips, SW cor. SE Section 8-9-6, was cleaning out to drill deeper into the Wilcox sand. The oil was found in the sand at 4,228-45 feet, where it made around 250 bbls. of oil.

The second well completed in the area was the Prairie Oil & Gas Co.'s No. 1 Sager, SE cor. SW Section 8-9-6, a west offset to the discovery well, swabbed 485 bbls. of oil in 24 hours from the Wilcox sand at a total depth of 4,245 feet.

In the East Little River Pool, Gypsy Oil Co.'s No. 5 Walker, NE cor. SW SE Section 5-7-7, was drilled deeper into the Cromwell sand to a total depth of 3,242 feet, where it flowed 147 bbls. of oil in 24 hours. The gas from the well is estimated at 18,000,000 feet a day.

Carr City Pool, in the Greater Seminole area, continues active. Amerada Petroleum Corp.'s No. 2 Tiger, SE cor. SW NE Section 3-8-5, swabbed 480 bbls. of oil in five hours from the Wilcox sand at a total depth of 4,211 feet. The test is cleaning out and preparing to take another potential gauge July 1.

Prairie Oil & Gas Co.'s No. 2 Hassman-Harjo, SW cor. SE NE Section 3-8-5, swabbed 325 bbls. of oil in 24 hours from the Wilcox sand at a total depth of 4,201 feet.

In the Oklahoma City Field the American Oil & Royalty Co.'s No. 1 Washington, SW cor. NW SW Section 35-12-3w, in the north end of the field, which brought production nearer the business district, flowed 7,701 bbls. of oil in four hours. The gas was estimated at 89,000,000 feet a day. The Wilcox sand was found at 6,240-6,357 feet.

Rajah Oil Co.'s No. 1 Davis, NW cor. NE Section 3-11-3w, blew in while the crew were circulating at a total depth of 6,284 feet. It was estimated to be a 35,000-bbl. well with 45,000,000 feet of gas a day. Connections were being changed.

The deepest drilling test in the State is Mid-Kansas Oil & Gas Co. and Ramsey Petroleum Co.'s No. 6 Preston-Culp, NW cor. NE Section 6-5-9w, on the west side of the Cement Pool, in Caddo County. The test was drilling at 8,350 feet on the last report in sandy shale with nothing showing.

In the Wewoka Townsite Pool, in Seminole County, Droppleman Drilling Co.'s No. 1 Butler, SW cor. SE NW Section 30-8-8, swabbed 100 bbls. of oil in 12 hours from the Hunton lime after being plugged back to 3,765 feet. The total depth of the well was 3,987 feet, where it had a hole full of water.

KANSAS

Another wildcat test in Ellsworth County found oil in the Silicious lime. Gypsy Oil Co., Tom Palmer and others' No. 1 Stoddenburg, C SW, Section 22-16-10w, in the southwestern part of the county along the Ellsworth arch, filled up 3,000 feet with oil in 6 hours, and 3,250 feet in 15 hours. The well is shut down while the owners erect tankage. It is located several miles from any other oil production.

A new wildcat test was announced for eastern Reno County, Madison, Harris & Haun's No. 1 Esau, NE cor. SE, Section 12-22-4w, expect to start operations in a short time. Material is being moved to the location. Offset acreage to the location is owned by the following companies: Mid-Kansas Oil & Gas Co., the north offset; W. C. McBride, Inc., the east offset; Prairie Oil & Gas Co. donated the 60 acres on which the test is being drilled, and own the 60 acres to the south; Skelly Oil Co. the northeast offset, and has donated 40 acres to the operators drilling the test.

Phillips Petroleum Co. and others' No. 2 Gratton, SE cor., Section 19-19-1, found 500,000 feet of gas in the chat at 2,940 feet. The test will probably be drilled to the Viola as it offsets a Viola producer recently completed by United Petroleum Corp. and others.

The Gled Oil Co.'s No. 1 Anderson, NE cor. NW, Section 30-19-1, was showing oil and gas in the chat at 2,937-80 feet. The crew was drilling deeper at 3,100 feet.

McPherson Oil & Gas Co.'s No. 2 Giffin, C SW NE, Section 14-19-2w, in the Decker gas area, was estimated to be making 15 bbls. of oil an hour and 6,000,000 feet of gas a day from the chat at 2,899-2,951 feet. The same company's No. 3 Giffin, C SE cor. NW, Section 14-19-2w, is shut down on top of the chat at 2,895 feet.

The McPherson Oil & Gas Co. announced two new locations during the day on its properties in the Decker gas field. One is No. 3 Hill, C NE NE, Section 10-19-2w, and the other is No. 2 Lovett, C SW NW, Section 13-19-2w. Both tests will be drilled at once.

The well of Tatlock and Shell Petroleum Corp., No. 1 Tonn, in Section 17-25-4w, has been abandoned. The well was completed for 300 bbls. of oil a day about six months ago and later declined to 17 bbls. of oil a day and was plugged.

Boyle-Grossman and Dewey & Mitchell's No. 1 Greenawalt, a wildcat in Rush County, located in the C SW, Section 17-19-16w, and south of two other gas producers in the area, was drilling at 3,610 feet. The gas horizon is expected around 3,650 feet.

CORNING GAS FIELD

CORNING, N. Y., June 29.—Pentoga Gas Co. and DeGolier's No. 1 Earnest, north of the village of Wayne, N. Y., is making 3,000,000 feet of gas.

Three dry holes are reported in the Tioga County Field, on the Pennsylvania side. Lycoming Gas Co.'s No. 1 Charles Tremaine was drilling at 4,015 feet; Penn United Gas Co.'s No. 1 Julius Tremaine was below 3,600 feet, and the Lycoming Gas Co.'s No. 1 Price, at 4,280 feet, were all regarded as failures as far as Oriskany sand gas production is concerned. The wells are located on the edge of the structure in their respective parts of the field. The Lycoming Gas Co. was preparing to complete No. 1 Place and No. 1 M. P. Close, both of which were regarded as good possibilities.

CAPT. C. A. BARBOUR DIES

HOUSTON, Tex., June 29.—Capt. Clyde A. Barbour, 57 years old, a prominent figure in the natural gas producing and the carbon black manufacturing industry, died June 24 at his Louisiana manor near Franklin. Until a month ago he was president of the Carbons Consolidated, Inc.

Captain Barbour had been a resident of Houston, as well as Louisiana, for 20 years, maintaining two homes. He had been engaged in numerous large development projects in Texas and Louisiana and had been associated closely with the lumber industry, shipping and banking as well as his gas and carbon black business. In the boom days of the Tampico, Mexico, oil fields he engaged actively in the transportation of petroleum and terminalling. He was born in Jeffersonville, Ind., and his early days were spent on Ohio and Mississippi River packets.

C. C. LUCID DIES

HOUSTON, Tex., June 29.—C. C. "Con" Lucid, 59 years old, head of field land work for The Texas Company, Houston, died unexpectedly at his home here Thursday night, June 25. He had been with The Texas Company since January 15, 1919, working continuously since then, including the day of his death. Mr. Lucid at one time was a well known ball player and coach. He was a native of Ireland but came to this country at an early age. He is survived by his widow, two daughters and a son.

L. P. HAMMOND DEAD

DALLAS, Tex., June 29.—L. P. Hammond, 45, of Wichita Falls, was found dead in a bathroom in a downtown hotel tonight. With his wife and two small children, he was en route to his home in Wichita Falls.

He had been one of the most active oil operators in Northwest Texas and Oklahoma for 22 years. He came to Texas from Tennessee as a boy and operated in the Sour Lake and Spindletop Fields before coming to Petrolia with the opening of the oil field there.

On April 10 of this year his young son, L. P., Jr., was killed in an automobile accident near Wichita Falls.

YOUNT LEE PIPE LINE

FORT WORTH, Tex., June 29.—The Yount Lee Pipe Line Co. has been granted a charter, with a capital stock of $1,000,000, putting the Yount Lee Oil Co. of Beaumont into the oil transportation business. The company is constructing 190 miles of 10-inch line from Gregg County to Beaumont, jointly with the Sun Oil Co. Incorporators are M. Frank Yount, T. F. Rothwell and J. H. Phelan, chief executives of the Yount Lee company.

VISITOR CAUSES FIRE

A fire occurred recently at one of the gasoline plants of a large manufacturer in the Mid-Continent and the report of the cause might serve as a warning. The report follows:

"An employe was working on the fluid end. He subconsciously noticed a second man in the doorway. At the same time an explosion occurred, followed by a fire. Both men were painfully burned. The man in the doorway proved to be an outsider who had no business in the plant yard. The cause of the explosion is not known. The employe was not using any tools at the moment of the fire. Therefore, the origin of the explosion and fire may have been from the outsider. In any event, such an accident is a very unsatisfactory happening. This particular plant was fenced and posted. The employes now realize the danger involved with visitors, both to themselves and company property, and it is believed that all trespassers will now have a difficult time in gaining admission to the plants."

MOVES OFFICES TO CHICAGO

The Continental Construction Co. is moving its offices from Kansas City to Chicago, where the new offices will be located at 20 North Wacker Drive.

OIL MAN'S CALENDAR

AUGUST

10—Denver, Colo., Oil States Advisory Committee.

31-Sept. 4—Buffalo, N. Y., American Chemical Society.

SEPTEMBER

1-3—Cleveland, Ohio, twentieth national aeronautic meeting, Society of Automotive Engineers.

16-18—Atlantic City, N. J., annual meeting, National Petroleum Association, Hotel Traymore.

28-29—Atlantic City, N. J., National Association of Motor Bus Operators, Hotel Ambassador.

OCTOBER

2-3—Houston, Tex., Petroleum Division, American Institute of Mining and Metallurgical Engineers.

12-16—Chicago, National Safety Council.

14-16—Pittsburgh, Pa., Society of Industrial Engineers.

NOVEMBER

10-12—Chicago, twelfth annual meeting, American Petroleum Institute, Stevens Hotel.

16-21—Pittsburgh, Pa., third International Conference on Bituminous Coal, Carnegie Institute.

DECEMBER

7-12—Atlantic City, N. J., Trade Show, Motor and Equipment—National Standard Parts Association.

9-11—Atlantic City, N. J., American Institute of Chemical Engineers.

28-31—Tulsa, Geological Society of America, Mayo Hotel.

Rain . . salt air . . and the long years *have scarcely touched this light tracery of*

WROUGHT IRON

THE KIND THAT HIGHLAND MAKES

Photograph by George W. Johnson, from "Wrought Iron in Architecture" by G. E. Geerlings, Charles Scribner's Sons

The King Mansion in Charleston, South Carolina is one of a long list of examples of the endurance of Wrought Iron afforded by this beautiful southern city.

In the first fifty years of the last century, Werner, Dothage, Tebout, and Justi, a group of inspired craftsmen, filled Charleston with beautifully designed and fabricated Wrought Iron. Most of these examples are from 70 to 110 years old. Most of them are of light construction. All are in a splendid state of preservation.

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In presenting one more link in the long chain of evidence proving Wrought Iron endurance—Highland again would emphasize two points: First, that the record of the King Mansion in Charleston, South Carolina is only one of thousands to be found all over the world. In fact, there are scores of similar records in Charleston alone. Second, Highland is offering you today the kind of Wrought Iron that has set up through the years incontrovertible evidence of resistance to rust—whether caused by rain, salt air, smoke or fumes.

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The basic characteristic responsible for the endurance of Wrought Iron is Iron Silicate.

Iron Silicate appears in Highland Wrought Iron as a series of impenetrable barriers, which effectively stop rust at the surface and repel any further advances.

The terrific losses to industry through rust—something over $500,000,000 per year—are generally recognized. Business leaders are turning to Highland Wrought Iron as the means of stopping it.

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Determine that you will no longer pay Rust Tax. Write for information that will enable you to stop this heavy annual loss—once for all.

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Scientific and Economic Proration

Proration of Petroleum Production Will Be Successful When Based Upon Scientific and Economic Laws of Nature and Business

By Garrett Kemp, A.M., Ph.D.
Atlantic Oil Producing Co.

Proration of petroleum production will be successful when based upon natural scientific and economic laws. These laws are laws of nature and of business involving supply, demand and distribution and also consumption.

These laws cannot be violated without paying certain penalties in the form of losses expressable in definite figures. Ignorance of these laws provides no exemptions from penalties. These laws of nature and of business are so intimately related that they are in reality one and inseparable—in fact, the violation of any one carries with it the violation of all.

It is most absurd, to say the least, to operate the business of petroleum production as a "game of gamble" and expect any beneficial results in spite of willful and ignorant violation of the industry's governing natural scientific and economic laws.

The regulation of petroleum production will prove not only successful but will be welcomed by the producer when its results provide beneficial economic advantages alike to royalty owners, producers, refiners and consumers.

Scientific and economic regulation of life insurance operations is monumental evidence of its beneficial and enduring results, in fact, it placed this business in an enviable position.

Economic disaster is inevitable when both natural, scientific and economic laws are disregarded; however, the immutable law of the survival of the fittest will just as inevitably provide an economic reward to the fittest to survive in the petroleum producing industry. These laws will rule and serve when obeyed; however, they will spell ruin for those who wilfully or ignorantly refuse to consider them.

Maximum ultimate production of a well or a field is the goal for maximum economic returns to royalty owners, producers, refiners and consumers; therefore, the goal of petroleum proration must be maximum ultimate production from each and every well.

Maximum Ultimate Production

The maximum ultimate production of an oil well is governed by very exacting natural laws. These laws are known and can be intelligently applied by those who have made an intensive study of physics, mathematics, chemistry and engineering.

Investigation of the nature of practical research along these lines will be fruitful and pay its own cost many times over in increased recovery of losses in petroleum now left in the ground.

Petroleum exists in porous geological formations of sand or limestone under pressures sufficient to cause free flow above the earth's surface. This pressure is composed of gas pressure, hydrostatic or water pressure, pressure due to capillary action of water, and osmotic pressure to some extent perhaps due to the difference in salinity of the waters. This pressure is definitely related to the temperature of the geological formations in the porous parts of which exists the oil and gas.

The pressure and heat which causes the oil to flow through the porous formations and up through the well is best considered as potential energy—stored energy—which may be utilized very efficiently or wasted.

The most important function of the gas dissolved within the oil is to facilitate the movement of the oil through the porous formations to the bottom of the well. The heat content of the oil together with the dissolved gas decreases the viscosity of the oil and therefore decreases the resistance to the oil movement through the porous formations. The higher the temperature and the greater the amount of gas dissolved in the oil the smaller the time required for oil to move through the porous formation to the bottom of the well. The production of a well depends on the movement of the oil from the geological formations. This fact is most important for this particular study.

Therefore the most important natural phenomena involved in the flow of oil are the pressure, temperature and the amount of gas dissolved in the oil. Free gas in pockets helps with its pressure but it is of minor importance compared to the dissolved gas in the oil. The larger the quantity of dissolved gas in each barrel of oil existing in the porous sand or limestone the freer it flows or moves to the well. (The oil in the sand or limestone does not flow in the sense that it flows in a pipe. It is moved along through the pores by a process like bubbling or frothing.)

Gas-Oil Ratio

It is customary to name the number of cubic feet of gas dissolved in a barrel of oil the gas-oil ratio, hereafter designated by the abbreviation GOR.

Since it is impossible to measure the GOR in the sand or limestone the next best measurement is at the very bottom of a well and not at the top of the well. It will be approximately true to assume that the change in the GOR at the bottom of a well is very nearly similar to that within the geological formation. Therefore, a study of the change in GOR at the bottom of a well with the time will give certain facts which will reveal the law of flow of oil through the porous formation in which it is stored. When this law is once determined for a well it will reveal characteristics which are related directly or indirectly, such as pressure, temperature, porosity, position of well on structure, area of drainage per well, maximum ultimate production, and total time of production. Therefore it is most important to study the change with time of the GOR (gas-oil ratio) at the bottom of a well.

The mathematical expression of this law showing the relation between the GOR and time will be developed below.

Let X represent the GOR at any time, t, hours after flow starts. Let M represent the GOR when the well ceases to flow, that is the maximum value.

The time rate of increase or change in GOR is proportional to the difference between the maximum value, M, and the value, X, at any time after well begins to flow. This may be expressed in the form of the differential equation,

$$\frac{dX}{dt} = K(M - X) \qquad (a)$$

The constant, K, depends upon pressure, temperature, porosity, depth of well, position on structure, area of drainage, thickness of sand or lime formation, and size of tube opening at bottom of well. This constant K is different for different wells and may be used to compare one well with the others in the same area.

The differential equation (a) may be written in the form

$$\frac{dX}{M - X} = K\,dt$$

and by integration it becomes

$$-\log (M - X) = Kt + \log C$$

The integation constant may be determined by known conditions as follows: Before flow begins the value of time is zero and the GOR represented by X has the initial value A. Therefore, by substituting these values in the integrated equation the result is

$$-\log (M - A) = 0 + \log C$$

and the equation becomes

$$-\log (M - X) = Kt - \log (M - A)$$

which may be written

$$\log \frac{M - X}{M - A} = -Kt$$

which may be transformed to the exponential form

$$X = M - (M - A)\, e^{-Kt}$$

where e is Naperian base.

This is the mathematical expression showing the relation between the change in GOR with the time for a flowing well.

When a well ceases to flow the time, t, is considered infinite. Then the value of the GOR, or X, will be given by the equation

$$X = M - (M - A)\, e^{\infty}$$

and since e^{∞} is zero then it follows that $X = M$, the maximum value of GOR, which means that when a well produces the minimum amount of oil with the maximum amount of gas other conditions begin which are not governed by the law expressed in the form of the mathematical equation. Salt water will no doubt be the greatest factor in changing conditions.

The final equation expressing the change in GOR, or X, with the time, t, is

$$X = M - (M - A)\, e^{-Kt}$$

which may be represented by the curves in Figure 1.

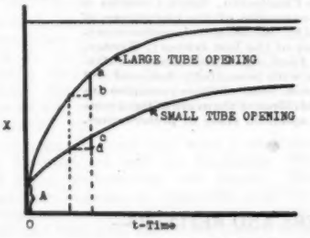


Figure (1)

Size of Opening in Tube

These curves show that the size of the opening in tube at the bottom of the well is very important. For the large tube opening during a given number of hours of flow, ab, represents the change in X, the GOR, for the time, while cd represents the change in GOR for the small tube opening. Since cd is smaller than ab it means that the rate of increase of GOR is less for small tube opening than for the large, therefore the controlling factor is the change in the size of tube opening at the bottom of the well.

The application of the gas-oil ratio as a function of time to a system of proration of production requires control on the basis of the following:

(a) Determination of the change in GOR with time at the bottom of each well with a standard size tube opening.

(b) Plot GOR-time curve for each well.

(c) Measurement of pressure and temperature changes with time at the bottom of each well.

Instruments can be developed by the application of old and proven methods to take the necessary measurements at the bottom of each well. This is no practical obstacle.

Figure 2 shows the GOR-time curve plotted for the change in X with the change in time.

Proration of production would be controlled by the allowance of a certain change in GOR, such as the amount, CD, shown on the X co-ordinate, CH, in the time, GH, on the time axis.

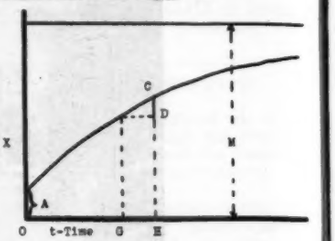


Figure (2)

Certain corrections must be made for differences in pressure, temperature, etc., due to difference in position on producing structure and the number of acres drainage per well.

Figure 2 shows the form of the curve of a well flowing through a given standard size tube opening, the size of which could be made adjustable from the surface.

The producer would be required to operate his well so as to make the increase, CD, in GOR within the time interval, GH. He could operate wide open and use his allowance in GOR increase just as rapidly as he desired; however, if his allowed increase in GOR were used before the time, GH, he would be required to shut down his well till the expiration of the time interval.

The maximum production for each well in the time interval would be governed by the most efficient use of the allowed increase in GOR.

Most Efficient Operation

This method of regulation would offer and give a reward in actual production for the most efficient operation of a well and this reward would not be given at the expense of others. The present methods of producing take a loss in oil left in the formation when it could be recovered.

It seems that this method of regulation of proration would be considered most reasonable since it is based upon actual measurements in each well.

It allows for difference in position on structure, pressure, temperature, porosity, depth, wells per acre and thickness of producing formation.

Instruments for measuring changes in gas-oil ratio, pressure and temperature can be developed at reasonable cost and operated automatically if necessary.

In order to show how the GOR-time curve compares with the production curve, it will be necessary to develop the mathematical expression for the production of a well.

Production of an Oil Well

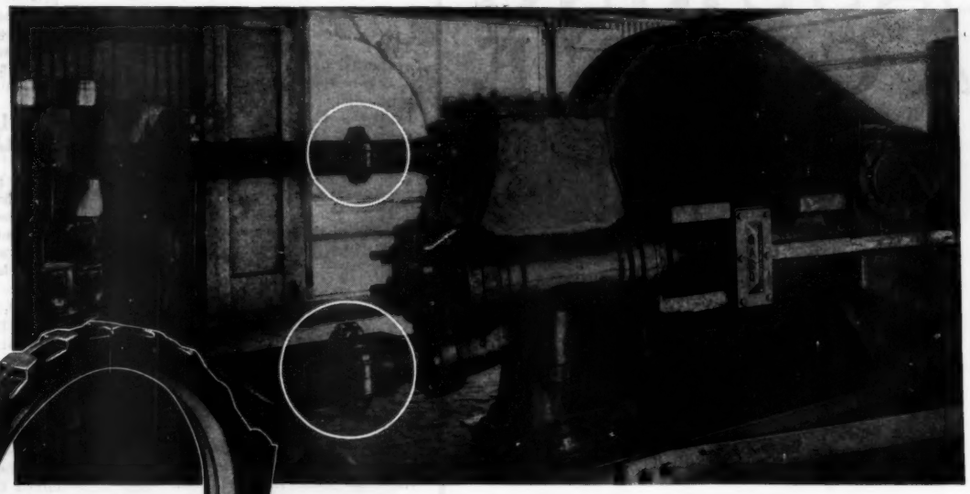
Let N be the maximum ultimate production in barrels.

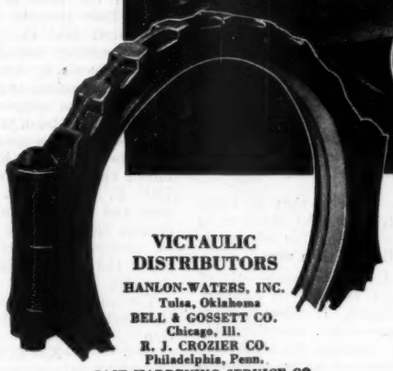
Let Y be the number of barrels produced during any time t hours, this time to be measured from the beginning of flow.

Then $\frac{dY}{dt}$ is the time rate of production.

This time rate of production is proportional to the difference $N - Y$, the amount of oil yet to be produced and left after time, t. This mathematical relation

"For every joint on the line"





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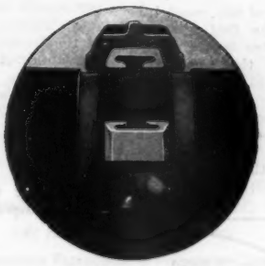

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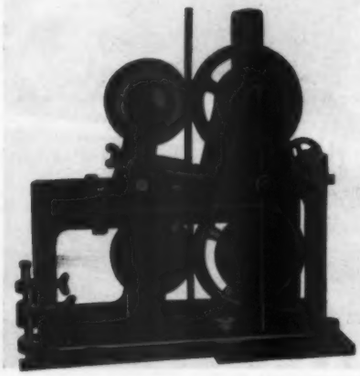

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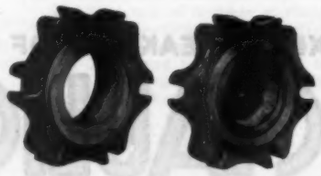

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may be expressed by the differential equation

$$\frac{dY}{dt} = J(N - Y)$$

which may be written in the form

$$\frac{dY}{(N - Y)} = J\,dt$$

which by integration becomes

$$-\log (N - Y) = Jt + \log C$$

The integration constant log C can be evaluated by imposing known conditions.

Before the well starts to flow, time is zero, and of course Y is zero. Then log C = —log N, and by substituting this value the equation becomes

$$\log \frac{(N - Y)}{N} = Jt$$

or written in the exponential form

$$Y = N(1 - e^{-Jt}) \qquad (a)$$

Now let Q be the time rate of flow in barrels per hour.

Then by differentiation of equation (a)

$$Q = \frac{dY}{dt} = \frac{d}{dt}\left[N(1 - e^{-Jt})\right]$$

which becomes

$$Q = NJ\,e^{-Jt},$$

the final production equation.

When time is infinite, that is when the well ceases to flow, the value of Q is then zero, since the value of e^{∞} is zero, the rate of flow is then zero.

The constant, J, is a characteristic of each well and may be used to compare one well with another. It depends upon the pressure, temperature, porosity, size of tube opening, position on structure, wells per acre, depth of wells, thickness of sand or lime, and the gas-oil ratio.

This equation will give a means by which the estimation of the ultimate production and size of area of drainage of a well can be determined without too much blind guessing.

The production curves for small and large tube openings at the bottom of a well shows by Figure 3 that the advantage is in the direction of the small tube opening in spite of the fact that the theoretical curve indicates favorable production conditions for the small tube opening. Sound practical operation will discover the proper size of tube opening for maximum production and no purely theoretical deductions can predict the most efficient size.

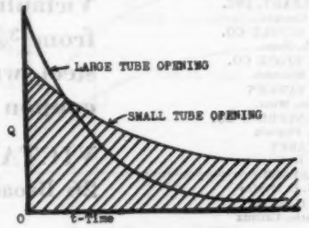

Figure (3)

The area bounded by the curve and the co-ordinate axes is directly proportional to the total production. This shows that the best and most efficient conditions are in favor of the tube with the small size opening. The area under the curve for the small tube opening is larger than that for the large as shown in Figure 3.

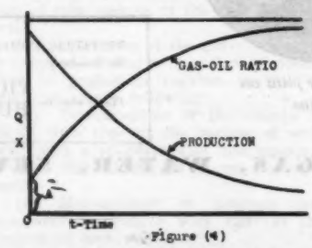

Figure (4)

Comparison of the GOR-time curve and the production curve is given below in Figure 4.

The production curve shows a decrease for a corresponding increase in the GOR curve which is in accordance with known facts.

Further study of this suggested method of petroleum production proration control will no doubt show that certain practical producing conditions must be taken into consideration for each field before it has actual practical value. It depends on the best and most hearty co-operation. A reward in production for most efficient operation of each and every well.

EXPLAIN PROPERTIES OF PARAFFIN HYDROCARBONS

(Continued from Page 22)

mean boiling point at any pressure. From this the apparent molecular weight can be found and then the data at any other temperature or pressure may be read from the chart.

Vapor Pressures

Cox[1], the first to draw these equilibrium lines straight and through one focal point, laid the pressure scales off logarithmically and determined the temperature scale by drawing a straight line at any convenient angle. He assumed this line to be the saturation line for steam, and from the steam tables obtained values of pressure corresponding to the temperatures he wanted on his scale. This determined the temperature scale from 32 to 700° F. Davis[2], also did work on pressure and temperature charts in extended ranges, determining a modulus to be used in plotting the temperature scales to make the lines converge as well as be straight.

The authors prepared their chart using the work of Cox and Davis as an equation

$$X = K_1 \log_{10} P$$

Where X is distance along abscissa.

Where P is pounds per square inch absolute.

The ordinate scale was laid off using the relation

$$Y = K_2\left(\frac{1}{382} - \frac{1}{t + 382}\right)$$

Where Y is distance along ordinate.

Where t is in degrees Fahrenheit.

Pressures were plotted from 0.1 to 30,000 pounds per square inch absolute, and temperatures were plotted from 0 to 2,400° F. by these equations.

From various sources—considering the International Critical Tables as the most accurate, values of vapor pressures were found for several straight chain paraffin hydrocarbons. These points were plotted and straight lines drawn through them. They all intersected at, or very close to the point 2,370° F. and 28,000 pounds per square inch absolute.

An equation of the pressure in terms of the temperature and molecular weight was obtained as follows: Let B equal the temperature of any hydrocarbon at 1 pound per square inch absolute, or at $\log_{10} P = 0$. The intercept form of the straight line equation is

$$Y = MX + B$$

Applying this equation to the vapor pressure lines where:

$$Y = \frac{1}{a} - \frac{1}{a + t}$$

$$M = \left(\frac{1}{a + t} - \frac{1}{a + t}\right)\frac{1}{\log_{10} P_s}$$

$$X = \log_{10} P$$

$$B = \left(\frac{1}{a} - \frac{1}{a + b}\right)$$

[1]Journal of Industrial and Engineering Chemistry; Vol. 15, p. 592.
[2]Idem. Vol. 17, p. 735; p. 1,287.

(Continued on Next Page)

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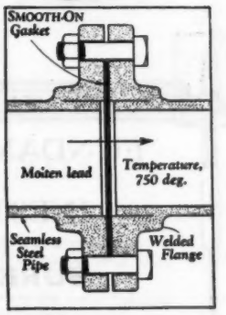

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we get the following equation

$$\frac{1}{a}-\frac{1}{a+t}=\left(\frac{1}{a+t}-\frac{1}{a+t_o}\right)\frac{\log_{10}P}{\log_{10}P_o}+\left(\frac{1}{a}-\frac{1}{a+b}\right)$$

$a=382$
$t_o=2{,}370°F.$
$P_o=28{,}000$ lbs./in².

Solving this equation for b we get the following

$$b=\frac{t_o(a+t)\log P-t(a+t_o)\log P_o}{(a+t)\log P-(a+t_o)\log P_o}$$

In order to make the equation fit all straight chain paraffin hydrocarbons a relation between b and molecular weight must be found. The following empirical relation is suggested:

$b=d\,M^n-S$
$d=150$
$n=0.367$
$S=730$
M=Molecular weight.

The equation that fits the vapor pressure of all straight chain hydrocarbons is:

$$(1)\quad d\,M^n-S=\frac{t_o(a+t)\log P-th}{(a+t)\log P-h}$$

where

$$h=(a+t_o)\log P_o=12{,}240$$

Solving for log p Equation 1 may be expressed

$$(2)\quad \log P=\frac{h(t-b)}{(t+a)(t_o-b)}$$

Solving for t Equation 1 may be expressed

$$(3)\quad t=\frac{hb-a(t_o-b)\log P}{h-(t_o-b)\log P}$$

Soving for M Equation 1 may be expressed

$$(4)\quad M=\left[\frac{(t+s)h-(t_o+s)(t+a)\log P}{dh-d(t+a)\log P}\right]^{1/n}$$

The vapor pressure lines were plotted from these equations and straight lines were the result. These lines all converge at the focal point mentioned. The values found by this equation check very closely so the authors suggested it as a relation between pressure, temperature, and molecular weight, at equilibrium conditions.

Entropy of Vaporization

There are many methods suggested in the literature for calculating the latent heat of vaporization of hydrocarbons, among these are: Troutons rule, Nernst equation, Forcrand, Cederberg, Johnson-Duhring relation, Clausius-Clapeyron equation and Hildebrand's relation.

The equation of Calusius-Clapeyron in the original form is difficult to use as the specific volumes of the liquid and vapor are not always known. There is, however, no doubt as to the accuracy of this equation if reliable data are known. It is stated as follows:

$$\frac{dP}{dT}=\frac{L}{T(V_v-V_v)}$$

The volume of the liquid is neglected at ordinary conditions of pressure and temperature and the modified Clausius-Clapeyron equation is derived as follows:

$$P^v=\frac{RT}{M}$$

$$\frac{d\log P}{dT}=\frac{ML}{RT^2}\quad\text{or}$$

$$\frac{d\log P}{d\log T}=\frac{ML}{RT}$$

$$(5)\quad \frac{P}{T}=\frac{RC}{M}$$

Hildebrand[3] states "the entropy of vaporization for normal liquids is the same when evaporated to the same concentration of vapor, that is, when the final mean distance between the molecules of vapor is the same."

Trouton's rule states that the entropy of vaporization is equal to a constant at the same pressure:

$$\frac{ML}{T}=20.7\text{ at 1 atmosphere}$$

This relation of Trouton does not hold and Hildebrand's relation is used instead.

Critical temperatures and pressures were found in the critical tables for several of the hydrocarbons. These values were put in Equation 5 with the molecular weight of that compound and the critical concentration C was solved. In every case this critical concentration was found to be at or very near to 3.72 pounds per cubic foot (3.72 was the average critical concentration).

This critical line was drawn on the chart and labeled "Critical Temperatures and Pressures." The vapor concentration of 3.72 pounds per cubic foot, zero entropy of evaporization, and zero latent heat of vaporization were put on it also. The vapor concentrations were then calculated down to 0.003 pound per cubic foot using Equation No. 5. Lines were drawn in through the calculated points for the same concentration. These concentration lines are curves which have decreasing negative slope and their horizontal projections are to a logarithmic scale.

Along these lines the Molal entropy of vaporization is a constant according to Hildebrand. It now remains to find the latent heat at one or two points along each one of these lines, thus determining the molal entropy of vaporization all along that line and checking also.

Duhring's relation is used for this purpose using octane as a standard. Water is sometimes used as a standard but it is not advisable to use it as it is not chemically similar to hydrocarbons. Water is a highly associated liquid and the hydrocarbons are nonassociated liquids. Schultz[4] used this method with very good results.

$$(6)\quad \triangle\frac{ML}{T}=\triangle\frac{M'L'}{T'}m+e$$

Equation No. 6 is the intercept form of Duhring's relation where the first term is change in molal entropy of vaporization of unknown, the next is the change in the molal entropy of vaporization of the standard (octane), m represents the slope and is a function of the specific heat data, and e is the intercept.

By this method values of the molal entropies of vaporization were calculated for each vapor concentration. The mean entropy was found and this was called the entropy of vaporization at that concentration and the value was put on the line.

With the molal entropy of vaporization scale included on the chart it was a simple matter to calculate the latent heat of vaporization of any compound at any temperature and pressure using the following relation:

$\frac{ML}{T}$ is a constant at equal vapor concentrations

The latent heat lines were drawn thus at intervals of 10 B.t.u. per pound.

Discussion

The equation of Clausius-Clapeyron in its modified form is accurate enough for ordinary conditions of temperature and pressure, but as the critical point is approached the volume of the liquid approaches the volume of the vapor and the equation no longer holds.

The chart covers a range of temperatures that go above the temperature where thermal decomposition starts. As this chart was worked out theoretically

[3]Journal of American Chemical Society, Vol. 37, p. 970.
[4]Journal of Industrial Engineering Chemistry, Volume 21, Page 557.

no provision has been made for this decomposition. The vapor pressures shown on this chart are therefore subject to correction up from 800° F.

It will be noticed that as the temperature is lowered the latent heat lines gradually approach the critical line.

The authors of this paper are indebted to Prof. C. L. Nickolls for his advice on this work. Large blueprints of the accompanying graph are available from the authors at 19 South Sandusky, Tulsa, Okla.

Nomenclature

M = molecular weight.

L = latent heat of vaporization in B.t.u. per pound.

T = temperature in degrees Fahrenheit absolute—Rankine.

t = temperature in degrees Fahrenheit.

P = pressure pounds per square foot absolute.

p = pressure pounds per square inch absolute.

C = vapor concentration in pounds per cubic foot.

V = volume in cubic feet.

R = Gas constant = 1,544.

$r = \text{gas constant} = \frac{1,544}{144} = 10.72.$

$h = (t_o + a) \log_{10} P_o = 12,240.$

b = temperature degrees Fahrenheit at 1 pound per square inch absolute.

d = 150.

n = 0.367.

S = 730.

a = 382.

P_o = 28,000 pounds per square inch absolute.

t_o = 2,370° F.

P_o; t_o=co-ordinates of focal point.

WILDCAT OPERATIONS IN OKLAHOMA

(Continued from Page 34)

HASKELL COUNTY

Holden et al's No. 1 Ellis, CWL NW NE Sec. 1-9-18 .... Drlg. 145 ft.
Bowers Oil & Gas Co.'s No. 1 Black, Kent Townsite, SE SW SW Sec. 31-8-20 ... . Shut down 215 ft.
Ault et al's No. 1 Harrison, CWL SE NE Sec. 14-9-19 .... Shut down 650 ft.
Ault et al's No. 1 Hall, NW SW SW Sec. 14-9-19 ..... Shut down 2,000 ft.
Ault et al's No. 1 Hall, SE NW Sec. 25-9-19 ..... Shut down 200 ft.
Holden's No. 1 Phillip, SE cor. Sec. 3-9-18e ..... Shut down 1,860 ft.
Marion Oil's No. 1 Sanders, NW NE NW Sec. 10-9-18e .. Shut down 2,337 ft.

HUGHES COUNTY

Wright et al's No. 1 Ott, SE SW Sec. 15-5-11 ..... Shut down 1,645 ft.

KAY COUNTY

Lewis et al's No. 1 Harris, SE NW Sec. 14-25-1 ..... Location.
Peters & Buckles' No. 1 Hayes, NW NE NW Sec. 24-28-2 ..... Wilcox 3,662-65 ft.; water; P. B. to 3,185 ft.; after shot no results; abnd.
Mummert Drlg. Co. et al's No. 1 Cormick, C NW SE Sec. 9-27-2 ..... Cleaning out 3,693 ft.
Blackwell Oil Co.'s No. 1 Harshman, Sec. 2-26-1w ..... Rig on ground.

KIOWA COUNTY

Christian's No. 1 Jones, NE SE Sec. 8-7-18w ..... Drlg. 590 ft.

LATIMER COUNTY

P. English's No. 1 Unknown, NW SE Sec. 16-6-19 ..... Shut down 1,542 ft.

McINTOSH COUNTY

Patterson et al's No. 1 Smith, SW cor. NW SE Sec. 32-9-16 ..... Drlg. 5,724 ft.

MURRAY COUNTY

C. R. Williams et al's No. 1 Williams, C NE NE Sec. 21-1-4 ..... Shut down 884 ft.

MUSKOGEE COUNTY

Sioux Oil Co.'s No. 1 Unknown, NW SE Sec. 21-11-19 .... Shut down 1,011 ft.

OKFUSKEE COUNTY

E. L. Robinson's No. 1 Rice, NW Sec. 2-10-9 ..... Location.
Shepard et al's No. 1 Nevens, SE NW SW Sec. 3-12-10.. Shut down 3,690 ft.

OKLAHOMA COUNTY

Cittizens Oil Co.'s No. 1 Sage Barber, NE cor. Sec. 21-11-3w ..... Shut down 1,200 ft.
L. C. Bivick's No. 1 Sunset Addition, NW SW NW Sec. 17-11-3w ..... Shut down 5,515 ft.
J. F. Cuniff, trustee's No. 1 Church Land, NE NW SE Sec. 17-12-4w ..... Shut down 6,700 ft.

PAWNEE COUNTY

Rookstool's No. 1 Wylie, NW NE SW Sec. 6-20-5 ..... Shut down 1,950 ft.
Sperry et al's No. 1 Mullrap, SE SW Sec. 2-22-5 ..... Drlg. 3,462 ft.
Cochran et al's No. 1 Green, NE cor. SW Sec. 15-23-5 .... Rig.

PITTSBURG COUNTY

J. Morrison's No. 1 Fowler, NE SE Sec. 13-7-17 ..... Rig.
C. Kennedy's No. 1 Travis, C SW NE Sec. 15-7-14 ..... Rig.
C. Canady's No. 1 Jones, NW cor. Sec. 14-8-14 ..... Rig.

POTTAWATOMIE COUNTY

Droppleman et al's No. 1 Jones, SE NW Sec. 21-8-3 .... Abandoned 4,878 ft.

ROGER MILLS COUNTY

Ute Oil Co.'s No. 1 Williams, C SW Sec. 23-12-24w ..... Drlg. 5,103 ft.
L. C. Bivick's No. 1 Davis, C NW NE Sec. 4-11-26w .... Fishing 2,956 ft.; show oil.

SEMINOLE COUNTY

Sunray Oil Co.'s No. 1 Sunray, NW SE Sec. 35-5-5 ..... Location.

STEPHENS COUNTY

Ross Southerd's No. 1 McKinney, NE cor. Sec. 25-1-8w .. Shut down 1,062 ft.

WASHITA COUNTY

Cooper & Terhune's No. 1 Blocker, NW cor. Sec. 29-8-19w. Shut down 1,875 ft.
Burns & Prince's No. 1 Deck, SW cor. Sec. 21-8-18 .... Shut down 1,050 ft.

OKLAHOMA PANHANDLE

TEXAS COUNTY

Western Prod. Co.'s No. 1 Gable, C NE Sec. 24-4-13 .... Drlg. 2,250 ft.
Three Way Oil Co.'s No. 1 Crane, SW NW Sec. 11-1-18 .. Shut down 4,725 ft.

SOUTHERN OKLAHOMA

ATOKA COUNTY

E. P. Whelan et al's No. 1 Howard, NW NE NW Sec. 6-4s-11 ..... Shut down 1,300 ft.
Brookshire's No. 1 R. W. Rowland, NW NE SE Sec. 18-3s-10 ..... Shut down 530 ft.

BRYAN COUNTY

Bryan County Oil's No. 1 Childs, NW SE SW Sec. 7-7-10.. T. D. 650 ft.
Bush et al's No. 1 Commerce Trust, NE cor. Sec. 35-6s-9 ..... T. D. 740 ft.; plugged back to 450-80 ft.

JEFFERSON COUNTY

Smith's No. 1 McCarty, SE NW NE Sec. 18-4s-8w ..... Location.
C. V. Chenault et al's No. 1 Grogan, SW NE SE Sec. 15-7s-6w ..... Shut down 1,446 ft.

LOVE COUNTY

Batson & Sterrette's No. 1 Dillard, SE NE NW Sec. 25-6s-3 ..... Show 5 bbls. 1,585-96 ft.; T. D. 4,433 ft.; P. B. to 1,604 ft.; pumping; showing 5 bbls.; abnd.

MARSHALL COUNTY

Tallaferro et al's No. 1 fee, NW SE SE NW Sec. 34-5s-5 ..... Drlg. 90 ft.
McCrory et al's No. 1 Little, NW SW Sec. 30-7s-6 ..... Bailing 10 bbls. of oil 495-97 ft.; recemented csg.; pumped 110 bbls. 20 hrs.
D. H. Curry's No. 1 Ward, NE SE SW Sec. 15-5s-6 ..... Shut down 2,310 ft.

McCURTAIN COUNTY

The Oil Journal's No. 1 Parks, C NE NW Sec. 9-6s-23 .. Shut down 50 ft.
Stewart's No. 1 Patterson, C SE SE Sec. 7-6s-24 ..... Drlg. 840 ft.

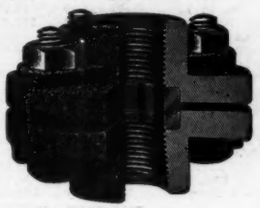
STEPHENS COUNTY

Brown's No. 1 Hightower, SW SE NE Sec. 15-3s-5w .... Fishing 574 ft.

PUSHMATAHA COUNTY

George's No. 1 Lane, NW SE Sec. 32-3s-15 ..... Shut down 840 ft.

DART UNIONS AND FLANGES



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The Oil and Gas Journal

TULSA, OKLA.

Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS

Pipe Line Statement for April Runs

Company—	Month bbls.	Dly av. bbls.
Prairie P. L. Co.*	924,000	30,800
Gulf P. L. Co.	1,391,156	46,372
Texas P. L. Co.	641,379	21,396
Empire P. L. Co.	2,312,259	77,075
Magnolia P. L. Co.	1,598,556	53,285
Cosden P. L. Co.	653,096	21,770
Stanolind P. L. Co.	3,340,000	111,333
Oklahoma P. L. Co.	2,159,671	71,989
Other lines*	6,966,000	232,000
Total April	19,989,617	666,320
Total March	19,803,139	638,810
Difference	177,488	27,310

Shipments

Prairie P. L. Co.†	2,324,661	77,489
Gulf P. L. Co.	1,497,417	49,914
Texas P. L. Co.	1,432,493	47,750
Empire P. L. Co.	2,293,164	76,405
Magnolia P. L. Co.	1,801,601	60,053
Cosden P. L. Co.	773,782	25,793
Stanolind P. L. Co.†	3,641,374	121,379
Oklahoma P. L. Co.	2,124,819	70,827
Other lines	7,140,000	238,000
Total April	23,028,313	767,610
Total March	21,762,925	702,030
Difference	1,265,387	65,580

Stocks

Prairie O. & G. Co.*	37,326,000
Gulf P. L. and Gypsy Oil Co.	3,634,336
The Texas Company	3,553,096
Empire P. L. Co.	5,425,148
Mid-Continent Petroleum Co.	3,670,612
Stanolind Crude Oil Pur. Co.*	12,300,000
Magnolia Petroleum Co.	6,167,201
Oklahoma P. L. Co.	2,590,601
Carter Oil Co.	8,768,235
Other lines*	31,129,000
Total April	115,563,208
Total March	117,204,838
Difference	1,641,630

*Estimated. †Prairie and Stanolind shipments include Texas crude oil.

EASTERN PIPE LINE REPORT FOR MONTH OF MAY

Runs from Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky, Illinois, Indiana and Michigan for April and May:

	Apr., 1931	May, 1931
Nat. Transit	142,938.57	143,585.76
S. W. Pa. P. L.	75,998.00	74,718.32
Eureka P. L.	294,234.07	293,679.22
Buckeye P. L. (Macksburg)	300,478.22	292,687.45
Buckeye P. L. (Cleveland)	11,192.35	13,408.60
Buckeye P. L. (Lima, etc.)	78,452.79	80,369.42
Indiana P. L.	2,975.41	3,425.44
Cumberland P. L.	166,133.49	158,976.43
N. Y. Transit	28,562.30	28,296.26
Tide Water P. L.	27,008.88	24,946.95
Pure Oil	195,231.33	188,974.65
Stoll Oil Ref.	.....	26,609.87
Bradford Transit	321,147.01	324,013.57
Total	1,647,436.50	1,653,692.08
Daily average	54,914.55	53,344.91

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for April and May:

	Apr., 1931	May, 1931
Nat. Transit	480,757.15	494,833.01
S. W. Pa. P. L.	356,704.21	442,582.39
Eureka P. L.	200,604.46	338,121.10
Buckeye P. L. (Macksburg)	230,921.29	231,067.12
Buckeye P. L. (Cleveland)	3,198.31	1,709.67
Buckeye P. L. (Lima, etc.)	1,677,678.11	1,588,533.48
Indiana P. L.	995,276.65	1,121,163.35
Cumberland P. L.	105,989.29	109,505.58
Southern P. L.	20,351.93	88,868.73
N. Y. Transit	174,908.27	191,931.04
Northern P. L.	165,693.77	177,918.97
Tide Water P. L.	451,375.06	464,064.43
Pure Oil	228,993.49	256,536.46
Bradford Transit	324,367.08	304,084.82
Tuscarora	283,195.69	285,769.63
East Gulf Oil	3,094.01	.....
Total	5,743,508.77	6,176,679.86
Daily average	191,450.29	199,247.74

Gross Stocks

The gross stocks held by various pipe lines in the oil producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky and Indiana at the close of April and May:

	Apr., 1931	May, 1931
Nat. Transit	790,741.10	753,134.11
S. W. Pa. P. L.	538,721.14	512,838.77
Eureka P. L.	1,762,107.52	1,817,026.88
Buckeye P. L. (Macksburg)	513,377.24	370,904.34
Buckeye P. L. (Cleveland)	46,072.82	58,962.66
Buckeye P. L. Lima, etc.)	3,730,603.33	3,641,367.87
Indiana P. L.	603,583.09	518,335.78
Cumberland P. L.	659,658.19	644,027.51
Southern P. L.	312,317.70	317,548.61
N. Y. Transit	109,007.83	126,136.54
Northern P. L.	291,059.44	339,978.15
Tide Water P. L.	900,197.78	863,211.61
Pure Oil	604,079.70	541,284.20
Tuscarora	13,172.80	13,462.07
Bradford Transit	164,714.48	210,020.88
East Gulf Oil	4,071.47	.....
Total	11,044,487.59	10,728,239.98
Increase	32,325.03	
Decrease		316,247.61

Grades of Oil

The following table shows the amount of the different grades of oil held by the Eastern Pipe Lines at the close of April and May, showing gross stocks of the above fields:

	Apr., 1931	May, 1931
Pennsylvania	3,966,991.51	3,895,594.08
Lima	809,789.51	793,443.56
Kentucky	674,030.47	654,328.32
Mid-Continent	4,984,054.76	4,854,341.47
Illinois	16,978.58	.....
Michigan	592,642.76	531,532.55
Total	11,044,487.59	10,728,239.98

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1928	1929	1930	1931
January	52,904	51,749	75,907	53,939
February	57,003	51,833	79,256	55,163
March	57,485	54,252	76,688	54,331
April	56,812	58,444	84,536	54,914
May	62,067	59,902	70,546	53,344
June	58,230	58,833	75,430	.....
July	57,144	66,087	68,921	.....
August	57,745	66,087	64,291	.....
September	53,487	67,316	56,595	.....
October	58,100	76,093	58,179	.....
November	53,865	74,831	52,332	.....
December	52,025	74,561	53,999	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1928	1929	1930	1931
January	146,465	165,721	217,622	175,369
February	167,368	159,387	224,355	183,494
March	158,883	161,474	228,846	189,503
April	172,935	169,737	241,845	191,450
May	180,559	184,281	248,383	199,247
June	188,024	185,404	234,401	.....
July	189,470	194,762	207,094	.....
August	192,853	194,946	205,506	.....
September	194,128	201,314	193,999	.....
October	176,000	191,367	157,675	.....
November	176,898	202,743	146,638	.....
December	173,572	186,257	143,091	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields including oil received from other lines at the close of each month for the past three years:

	1929	1930	1931
January	7,596,564	12,220,045	11,831,0
February	8,738,335	12,991,561	11,506,4
March	9,002,058	13,247,217	11,012,1
April	8,976,172	13,233,961	11,044,4
May	8,903,560	13,052,953	10,728,2
June	8,921,275	13,396,855	.....
July	9,211,595	13,268,562	.....
August	9,440,643	13,047,051	.....
September	9,443,067	12,812,018	.....
October	9,441,101	12,437,555	.....
November	9,868,538	11,851,380	.....
December	11,255,953	11,751,952	.....

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, June 1	643,433.
Runs from wells	408,284.
Other receipts	82,196.
Regular deliveries	297,567.
Other deliveries	208,208.

The amount of Illinois oil run by the Tide Water Pipe Co. in May was 24,946.95 bbls. Deliveries were 24,946.95 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

1931	Runs	Deliveri
May	433,231.80	322,513.
1930—		
January	543,387.95	498,293.
February	548,416.33	414,536.
March	631,944.49	469,119.
April	630,074.23	509,304.
May	605,147.37	504,069.
June	573,663.57	468,658.
July	604,529.64	388,454.
August	594,642.12	375,742.
September	457,001.11	371,691.
October	478,442.12	320,688.
November	422,794.68	355,402.
December	556,418.78	363,719.
1931—		
January	468,429.04	669,573.
February	429,384.54	461,262.
March	424,638.23	356,661.
April	421,814.98	282,533.

Tide Water Pipe Co., Ltd., also delivered in May, 163,543.95 bbls. Oklahoma oil.

AVERAGE DAILY RECEIPTS OF CALIFORNIA CRUDE AND REFINED OIL AT ATLANTIC AND GULF PORTS

Average barrels per day in 1930-31—	ATLANTIC PORTS Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS Galveston	New Orleans, Baton Rouge	Port Arthur, Sabine Pass	Tampa	Total	Total all por
June	8,300	.....	33,933	20,767	2,333	65,333	.....	.....	.....	.....	2,400	67,7
July	17,355	7,774	43,419	23,539	6,452	98,539	.....	.....	.....	.....	4,645	103,1
August	7,413	9,742	38,968	21,226	5,258	81,613	.....	.....	.....	.....	97	81,7
September	6,300	6,400	25,600	13,400	9,567	61,267	.....	.....	.....	.....	2,433	63,7
October	2,516	3,065	37,258	16,419	4,903	64,161	.....	.....	.....	.....	5,355	69,5
November	8,367	6,233	33,800	17,732	4,600	70,732	.....	.....	.....	.....	4,800	75,5
December	5,516	4,223	30,645	9,675	3,580	53,742	.....	.....	.....	.....	4,645	58,3
January	8,337	6,613	21,968	14,678	11,096	62,742	.....	.....	.....	.....	6,129	68,8
February	5,787	2,713	29,143	4,000	5,750	47,393	.....	.....	.....	.....	2,750	51,1
March	10,032	1,611	21,388	7,324	8,774	49,129	.....	.....	.....	.....	6,355	55,4
April	5,133	.....	19,200	16,500	10,067	50,900	.....	.....	.....	.....	4,000	54,9
May	4,453	3,064	19,903	11,226	6,258	44,903	.....	.....	.....	.....	2,355	47,2

AVERAGE DAILY IMPORTS OF CRUDE AND REFINED OIL AT PRINCIPAL UNITED STATES PORTS

Average barrels per day in 1930-31—	ATLANTIC PORTS Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS Galveston	New Orleans, Baton Rouge	Port Arthur, Sabine Pass	Tampa	Total	Tota all por
June	51,533	15,667	121,067	45,033	25,033	258,333	4,413	17,367	2,167	1,333	25,300	283,6
July	42,097	9,548	164,968	37,935	36,032	290,580	5,674	9,161	2,097	2,387	19,323	299,9
August	39,032	4,484	145,613	33,355	25,097	247,581	8,419	9,323	8,548	3,000	29,290	276,8
September	35,867	5,533	150,933	34,500	25,567	252,400	6,433	12,234	.....	3,300	22,467	280,8
October	19,839	11,742	146,194	35,355	26,967	240,097	6,065	7,067	2,774	3,545	19,451	259,5
November	39,633	35,900	124,633	36,467	24,667	261,300	2,467	7,366	.....	1,767	11,600	272,9
December	31,419	14,033	132,774	32,839	23,774	224,839	6,290	10,613	2,097	290	19,290	244,1
January	17,613	13,519	154,225	32,902	30,612	248,871	3,033	11,677	2,097	3,097	19,902	267,7
February	31,321	16,939	127,786	31,714	26,857	234,697	4,536	11,571	.....	536	16,643	251,3
March	37,645	18,935	141,150	26,290	21,129	238,161	4,065	2,580	.....	1,968	8,613	246,7
April	35,000	10,533	105,000	39,767	25,533	215,833	2,733	3,400	.....	.....	6,133	221,9
May	30,129	8,774	107,000	25,452	26,710	198,065	.....	2,000	.....	.....	2,000	200,0

GROSS PRODUCTION OF CRUDE OIL IN THE UNITED STATES FOR 12 MONTHS

(In Barrels of 42 Gallons)

1930—		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mts.	Eastern	Total
May:	Month	19,044,444	20,587,502	26,219,488	3,978,385	1,659,895	1,907,452	2,565,219	4,414,000	80,376,4
	Daily average	614,337	664,113	845,786	128,335	53,545	61,543	82,749	142,387	2,592,5
June:	Month	18,030,795	19,754,700	25,643,705	3,765,060	1,704,060	1,925,621	2,519,190	4,288,000	77,631,1
	Daily average	600,693	658,490	854,790	125,502	56,802	64,187	83,973	142,933	2,587,7
July:	Month	18,802,024	18,032,514	25,972,521	3,541,409	1,713,689	2,079,769	3,275,894	3,830,000	77,248,0
	Daily average	606,517	581,694	837,856	114,239	55,280	67,089	105,674	123,548	2,491,6
August:	Month	18,770,466	17,162,034	25,069,598	3,491,530	1,700,102	2,151,120	3,193,241	3,417,000	74,955,3
	Daily average	605,499	553,614	808,696	112,630	54,842	69,391	103,011	110,226	2,417,5
September:	Month	17,984,306	16,509,120	23,111,822	3,405,510	1,583,280	2,005,060	3,239,010	3,396,000	71,237,3
	Daily average	599,477	550,304	770,394	113,517	52,776	66,835	107,967	113,200	2,374,6
October:	Month	18,244,053	16,632,523	23,636,553	3,671,913	1,636,552	2,142,535	3,225,550	3,627,000	72,707,6
	Daily average	588,518	536,533	762,147	118,223	52,792	69,125	104,050	117,000	2,345,4
November:	Month	18,109,459	14,941,770	22,035,223	3,459,330	1,557,870	2,136,943	2,957,100	3,222,000	68,419,6
	Daily average	603,648	498,059	734,507	115,311	51,929	71,231	98,570	107,400	2,280,6
December:	Month	17,786,728	15,057,103	21,810,359	3,432,661	1,590,951	2,157,534	3,118,662	3,328,000	68,281,8
	Daily average	573,765	485,713	703,560	110,731	51,321	69,598	100,602	107,355	2,202,6
1931—										
January:	Month	16,485,798	14,850,953	20,690,452	3,149,078	1,574,955	2,131,287	2,966,142	3,374,000	65,223,2
	Daily average	531,798	479,063	667,434	101,583	50,805	68,773	95,682	108,839	2,103,8
February:	Month	14,930,933	13,371,576	18,964,596	3,369,016	1,402,492	1,981,476	2,747,024	3,139,000	59,896,4
	Daily average	533,248	477,557	677,307	120,322	50,089	70,767	98,108	111,750	2,139,2
March:	Month	16,364,842	16,430,341	23,975,309	3,498,598	1,444,941	2,032,197	2,897,725	3,374,000	69,019,3
	Daily average	527,898	530,011	741,139	112,858	46,611	65,587	93,475	108,839	2,226,4
April:	Month	15,803,541	16,717,650	26,611,890	3,281,880	1,412,220	1,920,780	2,888,100	3,373,000	71,909,0
	Daily average	526,785	557,255	887,063	109,396	47,074	64,026	96,270	109,100	2,369,6
	Total 12 months	210,347,388	200,048,087	282,733,515	41,944,365	18,950,993	24,577,169	35,592,958	42,673,000	856,895,4